

=> d his ful

FILE 'REGISTRY' ENTERED AT 11:59:37 ON 22 SEP 2003

E VITAXIN/CN
 L1 1 SEA ABB=ON VITAXIN/CN
 E MEDI 493/CN
 L2 1 SEA ABB=ON "MEDI 493"/CN

FILE 'HCAPLUS' ENTERED AT 12:00:12 ON 22 SEP 2003

L3 85 SEA ABB=ON ?PILUS?(W)?PROTEIN?
 L4 0 SEA ABB=ON L3 AND ?SUBSTRATE?(6A)?USHER?(W)?CHAPERONE?
 L5 2 SEA ABB=ON L3 AND ?SUBSTRATE?
 D AU 12
 L6 0 SEA ABB=ON L3 AND ?USHER?(W)?CHAPERONE?
 L7 11 SEA ABB=ON L3 AND (FIMH OR FIMA OR FIMG OR FIMF OR PAPG OR
 PAPA OR PAPE OR PAPF OR PAPK)
 L8 5 SEA ABB=ON L3 AND ?ADHESIN?(4A)(FIMH OR PAPG)
 L9 0 SEA ABB=ON L3 AND ?ACTIVE?(W)?FRAGMENT?
 L10 0 SEA ABB=ON L3 AND N(W)?TERMINAL?(W)?DELETED?
 L11 0 SEA ABB=ON L3 AND ?TERMINAL?(W)?DELETED?
 L12 0 SEA ABB=ON L3 AND ?EFFECTOR?(W)?PORTION?
 L13 3 SEA ABB=ON L3 AND ?DONOR?(W)?STRAND?
 L14 23 SEA ABB=ON L3 AND ?ANTIBOD?
 L15 0 SEA ABB=ON L3 AND ?LINK?(5A)?EFFECTOR?
 L16 8 SEA ABB=ON L3 AND ?IMMUNOGLOB?
 L17 0 SEA ABB=ON L16 AND (?HEAVY? OR ?LIGHT?)
 L18 6 SEA ABB=ON L3 AND ?ANTIGENIC?(W)?DETERMIN?
 L19 1 SEA ABB=ON L3 AND ?CARRIER?
 L20 0 SEA ABB=ON L3 AND ?ADMINIST?(5A)?PATIENT?
 L21 2 SEA ABB=ON L3 AND ?PATIENT?
 L22 1 SEA ABB=ON L3 AND (?URINARY?(W)?TRACT?(W)?INFECT? OR UTI)
 L23 0 SEA ABB=ON L3 AND (?COMPLEX?(5A)(FIMG OR FIMC))
 L24 12 SEA ABB=ON L3 AND (?TREAT? OR ?PREVENT?)
 L25 2 SEA ABB=ON L24 AND (?PROCESS? OR ?PROCED?)
 L26 18 SEA ABB=ON L3 AND ?VACCIN?
 L27 0 SEA ABB=ON L26 AND ?PROPHYL?(W)?EFFECT?
 L28 1 SEA ABB=ON L3 AND ?CHEMOTHERAP?
 L29 0 SEA ABB=ON L3 AND (?ANTICANCER? OR ?ANTI?(W)?CANCER?)
 L30 1 SEA ABB=ON L3 AND ?CYTOPROTECT?
 L31 2 SEA ABB=ON L3 AND ?ANTIBIOTIC?
 L32 1 SEA ABB=ON L3 AND (L1 OR ?VITAXIN)
 L33 1 SEA ABB=ON L3 AND (L2 OR ?MEDI?(W)493)
 L34 46 SEA ABB=ON (L7 OR L8 OR L14 OR L16 OR L18 OR L19 OR L21 OR
 L22 OR L24 OR L25 OR L26 OR L28 OR L30 OR L31 OR L32 OR L33)

*46 cit's from CA Plus*FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, JICST-EPLUS, JAPIO' ENTERED AT
12:18:11 ON 22 SEP 2003

L35 121 SEA ABB=ON L34
 L36 67 DUP REMOV L35 (54 DUPLICATES REMOVED)
 L37 0 SEA ABB=ON L36 AND (L1 OR ?VITAXIN)
 L38 1 SEA ABB=ON L36 AND (L2 OR ?MEDI?(W) 493)

67 cit's from other d.b.'s

** As you will see, There are only 8 or 9 of these that are too recent for your case, so I'm giving them all to you.*
MJ

=> d que stat 134

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L1      1 SEA FILE=REGISTRY ABB=ON VITAXIN/CN
L2      1 SEA FILE=REGISTRY ABB=ON "MEDI 493"/CN
L3      85 SEA FILE=HCAPLUS ABB=ON ?PILUS?(W)?PROTEIN?
L7      11 SEA FILE=HCAPLUS ABB=ON L3 AND (FIMH OR FIMA OR FIMG OR FIMF
      OR PAPG OR PAPA OR PAPE OR PAPF OR PAPK)
L8      5 SEA FILE=HCAPLUS ABB=ON L3 AND ?ADHESIN?(4A) (FIMH OR PAPG)
L14     23 SEA FILE=HCAPLUS ABB=ON L3 AND ?ANTIBOD?
L16     8 SEA FILE=HCAPLUS ABB=ON L3 AND ?IMMUNOGLOB?
L18     6 SEA FILE=HCAPLUS ABB=ON L3 AND ?ANTIGENIC?(W)?DETERMIN?
L19     1 SEA FILE=HCAPLUS ABB=ON L3 AND ?CARRIER?
L21     2 SEA FILE=HCAPLUS ABB=ON L3 AND ?PATIENT?
L22     1 SEA FILE=HCAPLUS ABB=ON L3 AND (?URINARY?(W)?TRACT?(W)?INFECT?
      OR UTI)
L24     12 SEA FILE=HCAPLUS ABB=ON L3 AND (?TREAT? OR ?PREVENT?)
L25     2 SEA FILE=HCAPLUS ABB=ON L24 AND (?PROCESS? OR ?PROCED?)
L26     18 SEA FILE=HCAPLUS ABB=ON L3 AND ?VACCIN?
L28     1 SEA FILE=HCAPLUS ABB=ON L3 AND ?CHEMOTHERAP?
L30     1 SEA FILE=HCAPLUS ABB=ON L3 AND ?CYTOPROTECT?
L31     2 SEA FILE=HCAPLUS ABB=ON L3 AND ?ANTIBIOTIC?
L32     1 SEA FILE=HCAPLUS ABB=ON L3 AND (L1 OR ?VITAXIN)
L33     1 SEA FILE=HCAPLUS ABB=ON L3 AND (L2 OR ?MEDI?(W)493)
L34     46 SEA FILE=HCAPLUS ABB=ON (L7 OR L8 OR L14 OR L16 OR L18 OR L19
      OR L21 OR L22 OR L24 OR L25 OR L26 OR L28 OR L30 OR L31 OR L32
      OR L33)

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=> d ibib abs hitrn 134 1-46

L34 ANSWER 1 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2003:277269 HCAPLUS

DOCUMENT NUMBER: 138:285764

TITLE: Vector priming reduces the immunogenicity of salmonella-based **vaccines** in Nrampl+/+ mice

AUTHOR(S): Vindurampulle, Christofer J.; Attridge, Stephen R.

CORPORATE SOURCE: Department of Molecular Biosciences, The University of Adelaide, Adelaide, 5005, Australia

SOURCE: Infection and Immunity (2003), 71(4), 2258-2261
CODEN: INFIBR; ISSN: 0019-9567

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The present studies in Nrampl-/- BALB/c and Nrampl+/+ CBA mice question the significance of this genotype as a determinant of the level of gut colonization following oral administration of naturally attenuated or highly virulent Salmonella strains. In line with previous results in BALB/c hosts, vector priming of CBA mice with Salmonella enterica serovar Stanley was found to significantly compromise the immunogenicity of a recombinant construct expressing a foreign **pilus protein**

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 2 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2003:18487 HCAPLUS

DOCUMENT NUMBER: 138:135434

TITLE: Impact of vector priming on the immunogenicity of recombinant Salmonella **vaccines**

AUTHOR(S): Vindurampulle, Christofer J.; Attridge, Stephen R.

CORPORATE SOURCE: Department of Molecular Biosciences, The University of Adelaide, Adelaide, 5005, Australia

SOURCE: Infection and Immunity (2003), 71(1), 287-297
CODEN: INFIBR; ISSN: 0019-9567

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB There are conflicting reports concerning the impact of prior vector priming on the immunogenicity of recombinant-Salmonella-based **vaccines**. A comparison of exptl. protocols identified two variables which might account for this inconsistency: the potential of the vector strain to colonize the murine gut-assocd. lymphoid tissue (GALT) and the nature of the foreign antigen subsequently delivered by the recombinant Salmonella construct. The former was investigated by constructing an aroA mutant of the Salmonella enterica serovar Stanley vector previously used in the authors' lab. Although the introduction of an aroA mutation had surprisingly little effect on GALT colonization, it did reduce the strength of antilipopolysaccharide (anti-LPS) **antibody** responses and the impact of vector priming. Studies were also performed to ascertain the extent to which any obsd. hyporesponsiveness consequent upon vector priming might be detd. by the characteristics of the foreign antigen. S. enterica serovar Stanley was used to deliver either of two Escherichia coli antigens, K88 **pilus protein** or the LT-B toxin subunit, to vector-primed mice. Both serum IgG and intestinal IgA responses to K88 were completely abolished, and those to LT-B were significantly reduced, as a consequence of vector priming. When similar expts. were performed with an aroA S. enterica serovar Dublin vector, responses to K88 were significantly reduced but

those to LT-B were unaffected by vector priming. Paradoxically, a priming infection with this vector induced stronger anti-LPS **antibody** responses but was less likely to elicit a state of hyporesponsiveness to subsequently presented foreign antigen. The impact of vector priming thus depends on both the Salmonella strain used and the nature of the foreign antigen, but the authors' present data strengthen concerns that preexisting antivector immunity represents a serious threat to the Salmonella-based **vaccine** strategy.

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 3 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2002:505237 HCAPLUS

DOCUMENT NUMBER: 137:62166

TITLE: Engineered **pilus proteins** for **vaccination** and immunotherapy

INVENTOR(S): Hultgren, Scott J.; Langermann, Solomon; Sauer, Frederic G.

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 27 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--------------------------|--|----------|-----------------|----------|
| US 2002086037 | A1 | 20020704 | US 2001-27350 | 20011228 |
| WO 2002059156 | A2 | 20020801 | WO 2001-US51037 | 20011220 |
| WO 2002059156 | A3 | 20030515 | | |
| W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| RW: | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | |

PRIORITY APPLN. INFO.: US 2000-257880P P 20001222

AB The authors disclose construction of **pilus proteins** exhibiting structural stabilization. Stabilization is achieved by occupation of the subunit-binding site by a covalently attached N-terminal extension domain or non-covalently by an engineered chaperone or other **pilus protein**. Such extension provides a "donor strand complementary" segment which may be altered to attach an auxiliary portion.

IT 188039-54-5, Synagis 324740-00-3, Vitaxin

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses) (of engineered **pilus proteins** with effector domains)

L34 ANSWER 4 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2002:103098 HCAPLUS

DOCUMENT NUMBER: 136:275819

TITLE: Identification and characterization of assembly proteins of CS5 pili from enterotoxigenic Escherichia coli

AUTHOR(S): Duthy, Thomas G.; Manning, Paul A.; Heuzenroeder,

CORPORATE SOURCE: Michael W.
Discipline of Microbiology and Immunology, Department
of Molecular BioSciences, University of Adelaide,
Adelaide, 5005, Australia

SOURCE: Journal of Bacteriology (2002), 184(4), 1065-1077
CODEN: JOBAAY; ISSN: 0021-9193

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB This study investigated the role of three genes comprising part of the operon which encodes CS5 pili from enterotoxigenic *Escherichia coli*. In-frame gene deletions were constructed, and the effects on biogenesis of the pili were examd. A deletion in *csfB* abolished *CsfA* major subunit accumulation in the periplasm, which could be restored by trans-complementation with a complete copy of the *csfB* gene. Localization studies using an **antibody** against *CsfB* showed that this protein was periplasmically located, and thus *CsfB* is likely to function as the specific chaperone for *CsfA*. An in-frame deletion mutation in the *csfE* gene resulted in pili approx. three times longer than those of the wild-type strain, thereby indicating a role for *CsfE* in pilus length regulation. Localization studies using an **antibody** generated against *CsfE* showed low-level *CsfE* accumulation in the outer membranes. Modulation of *csfE* expression in trans did not reduce the mean length of the pilus below that of the wild type, which indicated that *CsfE* is not rate-limiting for termination of pilus assembly. A deletion in the *csfF* gene also resulted in an elongated pilus morphol. identical to that of the *csfE* deletion strain. However, unlike *CsfE*, *CsfF* was shown to be rate-limiting for termination of assembly, since overexpression of *CsfF* in a *csfF* deletion strain resulted in a significant decrease in the mean length of the pilus compared to that of the wild type. When the same construct was introduced into the wild-type strain, pilus expression was abolished. Since *CsfF* bears significant homol. to the proposed *CsfB* chaperone, *CsfF* was predicted to act as the specific chaperone for *CsfE*. A double deletion in the *csfB* and *csfF* genes was shown to abolish the periplasmic accumulation of both *CsfA* and *CsfD* pilins, which could be restored individually only when the strain was trans-complemented with a wild-type copy of *csfB* or *csfF*, resp. Therefore, *CsfF* may chaperone not only *CsfE* but also *CsfD*. A model for CS5 biogenesis is also proposed based on these and previous observations.

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 5 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2001:334107 HCAPLUS

DOCUMENT NUMBER: 135:177920

TITLE: Immunoblot analysis of cyanogen bromide-cleaved
Moraxella bovis pilin reveals presence of shared
antigenic determinants on pili from
heterologous strains

AUTHOR(S): Greene, W. H.; Grubbs, S. T.; Potgieter, L. N. D.

CORPORATE SOURCE: College of Veterinary Medicine, Department of
Comparative Medicine, University of Tennessee,
Knoxville, TN, 37901-1071, USA

SOURCE: Veterinary Microbiology (2001), 80(4), 365-372

CODEN: VMICDQ; ISSN: 0378-1135

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB *Moraxella bovis* **pilus proteins**, collected and purified
from four strains of *M. bovis*, were cleaved with cyanogen bromide. Two

major fragments were produced. Antisera were produced in rabbits to the pilin protein fragments and to whole uncleaved pili from these strains. Immunoblots of whole and cyanogen bromide-cleaved pilin were reacted with the homologous and heterologous antisera to whole pili and cleaved pilin. Antisera to whole pili reacted strongly with homologous pilin. Weaker and inconsistent reactions were detected with heterologous pilin. Antisera produced to cyanogen bromide-cleaved pilin proteins reacted strongly with homologous and heterologous pilin fragments and uncleaved pilin proteins. These findings demonstrate the presence of conserved **antigenic determinants** on pili from heterologous strains that are non-immunogenic in the intact pilus but are immunogenic after **treatment** with cyanogen bromide. Cyanogen bromide-**treated** pilus prepn. might have potential as a **vaccine** because **antibodies** are induced against heterologous strains of *M. bovis*, whether these cross-reactive **antibodies** are protective remains to be detd.

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 6 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2001:50674 HCAPLUS

DOCUMENT NUMBER: 134:114827

TITLE: Donor strand complemented pilin and adhesin broad-based **vaccines**

INVENTOR(S): Hultgren, Scott J.; Pinkner, Jerome S.; Sauer, Frederic; Barnhart, Michelle; Waksman, Gabriel; Knight, Stefan

PATENT ASSIGNEE(S): Medimmune, Inc., USA

SOURCE: PCT Int. Appl., 92 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|--|----------|-----------------|------------|
| WO 2001004148 | A2 | 20010118 | WO 2000-US19066 | 20000713 |
| WO 2001004148 | A3 | 20010628 | | |
| W: | AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| RW: | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | |
| EP 1194561 | A2 | 20020410 | EP 2000-947305 | 20000713 |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | |
| JP 2003504083 | T2 | 20030204 | JP 2001-509757 | 20000713 |
| PRIORITY APPLN. INFO.: | | | US 1999-143582P | P 19990713 |
| | | | US 1999-144359P | P 19990716 |
| | | | US 2000-184442P | P 20000223 |
| | | | WO 2000-US19066 | W 20000713 |

AB Modified polypeptides contg. a **pilus-protein** sequence and a donor complementary sequence are disclosed, as well as complexes formed of a modified polypeptide and a pilin, or **pilus-protein**. Also disclosed are methods of using these novel

polypeptides as a means of **preventing** and/or **treating** bacterial induced diseases, esp. those caused by enterobacteria such as Escherichia coli. Methods of employing these modified pilus-derived polypeptides and complexes as **vaccines** and for generating **antibodies** for further study as well as for clin. purposes are also disclosed herein. In addn., **processes** for large scale prodn. of antibacterial **vaccines** contg. said polypeptides and complexes are also described.

L34 ANSWER 7 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2000:911460 HCAPLUS

DOCUMENT NUMBER: 134:70354

TITLE: Detection of Salmonella enteritidis by detecting **antibodies** to fimbrial or flagellin proteins

INVENTOR(S): Kwang, Hwei-Sing; Liu, Wei; Low, Su-Shing Sharon; Loh, Kwang Yeng Hilda

PATENT ASSIGNEE(S): Institute of Molecular Agrobiolgy, Singapore

SOURCE: PCT Int. Appl., 48 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|----------|
| WO 2000078995 | A1 | 20001228 | WO 1999-SG61 | 19990622 |
| W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| AU 9948172 | A1 | 20010109 | AU 1999-48172 | 19990622 |

PRIORITY APPLN. INFO.:

WO 1999-SG61 A 19990622

AB A method for detecting Salmonella enteritidis in poultry and their eggs comprises contacting a biol. sample obtained from poultry suspected of contg. S. enteritidis with a fragment of a S. enteritidis fimbrial protein or a fragment of a S. enteritidis flagellin protein which specifically recognizes S. enteritidis **antibodies** present in the sample and discriminates between S. enteritidis and other Salmonella spp.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 8 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2000:832370 H

DOCUMENT NUMBER: 135:151244

TITLE: Immunoprotect protein of u:

AUTHOR(S): Kang, Ning;

CORPORATE SOURCE: Department University,

SOURCE: Tianjin Yi

CODEN: TI

PUBLISHER: Tianjin Y

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB The immunoprotective effects of the **pilus protein papA** of uropathogenic Escherichia coli (UPEC) were studied. A 554-bp DNA fragment encoding the **PapA** mature polypeptide was amplified using PCP and cloned into eukaryotic expressing plasmid pcDNA3. The recombinant plasmid pCT37 was employed as DNA **vaccine** to immunize BALB/c mice. The **antibody** titers in expt. group (1:5750) was higher than that in the control group (1:4000), using whole bacterial ELISA (enzyme-linked immunoabsorbent assay). Both urine and renal colony counts indicated less frequent colonization in expt. group, though there was no significant difference in renal invasion between two groups. Thus, protein **papA** has a good immunoprotective effect.

L34 ANSWER 9 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2000:608611 HCAPLUS

DOCUMENT NUMBER: 133:213075

TITLE: Use of bioadhesives and adjuvants for the mucosal delivery of antigens

INVENTOR(S): Singh, Manmohan; O'Hagan, Derek

PATENT ASSIGNEE(S): Chiron Corp., USA

SOURCE: PCT Int. Appl., 39 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|--|----------|-------------------|----------|
| WO 2000050078 | A1 | 20000831 | WO 1999-US11906 | 19990528 |
| W: | AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| RW: | GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | |
| AU 9946730 | A1 | 20000914 | AU 1999-46730 | 19990528 |
| EP 1154793 | A1 | 20011121 | EP 1999-930126 | 19990528 |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI | | | |
| JP 2002537355 | T2 | 20021105 | JP 2000-600688 | 19990528 |
| PRIORITY APPLN. INFO.: | | | US 1999-122172P P | 19990226 |
| | | | WO 1999-US11906 W | 19990528 |

AB Compns. are provided which include bioadhesives in combination with adjuvants and antigens for mucosal delivery. Also provided are methods of making the compns., as well as methods of immunization using the same.

L34 ANSWER 10 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2000:569733 HCAPLUS

DOCUMENT NUMBER: 133:278499

TITLE: Snapshots of usher ordered pilus asse

AUTHOR(S): Saulino, Evan T.;

CORPORATE SOURCE: Department of Mol. Pathogenesis, Was Medicine, St. Lou

SOURCE: Proceedings of the United States of

PUBLISHER: CODEN: PNASA6; ISSN: 0027-8424
National Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Type 1 pilus biogenesis was used as a paradigm to investigate ordered macromol. assembly at the outer cell membrane. The ability of Gram-neg. bacteria to secrete proteins across their outer membrane and to assemble adhesive macromol. structures on their surface is a defining event in pathogenesis. We elucidated genetic, biochem., and biophys. requirements for assembly of functional type 1 pili. We discovered that the minor **pilus protein FimG** plays a crit. role in nucleating the formation of the adhesive tip fibrillum. Genetic methods were used to trap pilus subunits during their translocation through the outer membrane usher protein, providing data on the structural interactions that occur between subunit components during type 1 pilus formation. Electron microscopic and biochem. analyses of these stepwise assembly intermediates demonstrated that translocation of pilus subunits occurs linearly through the usher's central channel, with formation of the pilus helix occurring extracellularly. Specialized pilin subunits play unique roles both in this multimerization and in the final ultrastructure of the adhesive pilus.

REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 11 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2000:76122 HCAPLUS
DOCUMENT NUMBER: 133:57208
TITLE: Infection control strategy against periodontal pathogens by salivary IgA
AUTHOR(S): Honma, Kiyonobu; Okuda, Katsuji
CORPORATE SOURCE: Oral Biol., State Univ. New York at Buffalo, NY, USA
SOURCE: Shika Gakuho (1999), 99(11), 965-971
CODEN: SHGKA3; ISSN: 0037-3710
PUBLISHER: Tokyo Shika Daigaku Gakkai
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese

AB A review with 15 refs. **Vaccines** for periodontitis are discussed. A specific **antibody** is produced by DNA **vaccine** coding for arginine-specific cysteine protease of Porphyromonas gingivalis, and infection-protecting ability is under study. A fused protein of Porphyromonas gingivalis **pilus protein** with M6 surface protein of Streptococcus gordonii is expressed on the surface of S. gordonii, which induces **antibody** against P. gingivalis **pilus protein** and hence inhibits adhesion of the pathogen to oral mucosa.

L34 ANSWER 12 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1999:775109 HCAPLUS
DOCUMENT NUMBER: 132:148835
TITLE: The HRP pilus and extracellular proteins of Erwinia amylovora
AUTHOR(S): Hu, W.; Jin, Q.; Hart, P.; Jones, A.; He, S. Y.; Beer, S. V.
CORPORATE SOURCE: Department of Botany, Michigan State University, East Lansing, MI, 48824, USA
SOURCE: Acta Horticulturae (1999), 489(Eighth International Workshop on Fire Blight, 1998), 315-319
CODEN: AHORA2; ISSN: 0567-7572
PUBLISHER: International Society for Horticultural Science
DOCUMENT TYPE: Journal

LANGUAGE: English

AB *Erwinia amylovora* is the causal agent of fire blight on apple and pear trees. It elicits a hypersensitive response (HR) on nonhost plant species, such as tobacco. The long-term goal of this project is to produce fire-blight-resistant apple plants expressing **antibody** genes that target key extracellular pathogenicity proteins of *E. amylovora*. Toward this goal, the authors have characterized pathogenicity-associated extracellular proteins and macromol. structures of *E. amylovora*. *E. amylovora* secreted six major extracellular proteins in hrp-inducing broth culture. The extracellular appearance of at least three of these was hrp dependent. One of the secreted proteins had an apparent mol. wt. (MW) of 6.5 kDa, which is consistent with the predicted MW of HrpA of *E. amylovora*. Another hrp-dependent secreted protein had a mol. wt. of 198 kDa, which is consistent with the expected MW of the extracellular disease-specific protein DspE of *E. amylovora*. The third protein had a MW of 48 kDa and reacted with a harpin **antibody**. Polyclonal **antibodies** against HrpA and DspE have been produced in mice and the scFv (single chain fragment variable) **antibody** genes have been isolated from immunized mice. Finally, *E. amylovora* produced a pilus structure on hrp-inducing agar medium. This pilus structure was not produced when *E. amylovora* was grown on the hrp-repressing Luria-Bertani medium.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 13 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1999:525483 HCAPLUS

DOCUMENT NUMBER: 131:268632

TITLE: Structural basis of chaperone function and pilus biogenesis

AUTHOR(S): Sauer, Frederic G.; Fitterer, Klaus; Pinkner, Jerome S.; Dodson, Karen W.; Hultgren, Scott J.; Waksman, Gabriel

CORPORATE SOURCE: Department of Molecular Microbiology, Washington University School of Medicine, St. Louis, MO, 63110, USA

SOURCE: Science (Washington, D. C.) (1999), 285(5430), 1058-1061

CODEN: SCIEAS

PUBLISHER: American Assoc

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Many Gram-neg. pathogens assemble adhesive pili on their surfaces by Ig-like periplasmic chaperones and a large protein complex that facilitates sub-units across the outer membrane. PapK chaperone-subunit complex, reveals that the chaperone function completes the Ig-like fold of the donor strand complementation. The complex also suggests that during pilus biogenesis, every subunit completes the Ig-like fold of its neighboring subunit via a mechanism termed donor strand exchange.

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 14 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1998:527193 HCAPLUS

DOCUMENT NUMBER: 129:166193

TITLE: Therapeutic treatment and prevention
of infections with a bioactive material encapsulated
within a biodegradable-biocompatible polymeric matrix

INVENTOR(S): Setterstrom, Jean A.; Van Hamont, John E.; Reid,
Robert H.; Jacob, Elliot; Jeyanthi, Ramasubbu;
Boedeker, Edgar C.; McQueen, Charles E.; Tice, Thomas
R.; Roberts, F. Donald; Friden, Phil

PATENT ASSIGNEE(S): United States Dept. of the Army, USA; Van Hamont, John
E.; et al.

SOURCE: PCT Int. Appl., 363 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 15

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|-------------|
| WO 9832427 | A1 | 19980730 | WO 1998-US1556 | 19980127 |
| W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG | | | | |
| US 6309669 | B1 | 20011030 | US 1997-789734 | 19970127 |
| AU 9863175 | A1 | 19980818 | AU 1998-63175 | 19980127 |
| PRIORITY APPLN. INFO.: | | | US 1997-789734 | A 19970127 |
| | | | US 1984-590308 | B1 19840316 |
| | | | US 1992-867301 | A2 19920410 |
| | | | US 1995-446148 | A2 19950522 |
| | | | US 1995-446149 | B2 19950522 |
| | | | US 1996-590973 | B2 19960124 |
| | | | WO 1998-US1556 | W 19980127 |

AB Novel burst-free, sustained release biocompatible and biodegradable microcapsules are disclosed which can be programmed to release their active core for variable durations ranging from 1-100 days in an aq. physiol. environment. The microcapsules are comprised of a core of polypeptide or other biol. active agent encapsulated in a matrix of poly(lactide/glycolide) copolymer, which may contain a pharmaceutically acceptable adjuvant, as a blend of upcapped free carboxyl end group and end-capped forms ranging in ratios from 100/0 to 1/99.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 15 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1998:191022 HCAPLUS

DOCUMENT NUMBER: 128:305997

TITLE: Bacterial adhesion pili are heterologous assemblies of similar subunits

AUTHOR(S): Bullitt, Esther; Makowski, Lee

CORPORATE SOURCE: Department of Biophysics, Boston University School of Medicine, Boston, MA, 02118-2526, USA

SOURCE: Biophysical Journal (1998), 74(1), 623-632
CODEN: BIOJAU; ISSN: 0006-3495

PUBLISHER: Biophysical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB P-pili on uropathogenic bacteria are 68-.ANG.-diam. rods typically 1 .mu.m in length. These structures project from the outer membrane of *Escherichia coli*, and contain on their distal tip a thin fibrillum, 25 .ANG. in diam. and 150 .ANG. long, displaying an adhesin protein responsible for the binding of the bacterium to the surface of epithelial cells lining the urinary tract. Operationally, it is possible to identify three morphol. distinct states of the 68-.ANG.-diam. P-pili rods, based on the degree of curvature each can adopt. These states are designated straight, curved, and highly curved. The rods can also be unwound to form thin threads that are very similar to the tip fibrillae. Electron microscope data are used to distinguish among these four morphol. states and to define limits on the shapes of the **pilus proteins**. The mech. properties of the **PapA** polymers are assessed, and implications of rod polymorphism for pilus function are discussed. A wide variety of data are considered in light of the possibility that all pilins are similar in mol. architecture, with specific differences designed to optimize their specialized functions in the pilus assembly.

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 16 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1997:613338 HCAPLUS
DOCUMENT NUMBER: 127:290319
TITLE: Membrane cofactor protein (MCP or CD46) is a cellular pilus receptor for pathogenic *Neisseria*
AUTHOR(S): Kallstrom, Helena; Liszewski, M. Kathryn; Atkinson, John P.; Jonsson, Ann-Beth
CORPORATE SOURCE: Microbiology and Tumorbiology Center, Karolinska Institute, Stockholm, S-171 77, Swed.
SOURCE: Molecular Microbiology (1997), 25(4), 639-647
CODEN: MOMIEE; ISSN: 0950-382X
PUBLISHER: Blackwell
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Pili of *Neisseria gonorrhoeae* and *Neisseria meningitidis* mediate binding of the bacteria to human cell-surface receptors. The authors found that purified pili bound to a 55-60-kDa doublet band on SDS-PAGE of sepd. human epithelial cell exts. This is a migration pattern typical of membrane cofactor protein (MCP or CD46). MCP is a widely distributed human complement regulatory protein. Attachment of the bacteria to epithelial cells was blocked by polyclonal and monoclonal **antibodies** directed to MCP, suggesting that this complement regulator is a receptor for piliated *Neisseria*. The authors proved this hypothesis by demonstrating that piliated, but not non-piliated, gonococci bound to CHO cells transfected with human MCP-cDNA. They also demonstrated a direct interaction between purified recombinant MCP and piliated *Neisseria*. Finally, recombinant MCP protein produced in *E. coli* inhibited attachment of the bacteria to target cells. Thus, MCP is a human cell-surface receptor for piliated pathogenic *Neisseria*.

L34 ANSWER 17 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1997:426545 HCAPLUS
DOCUMENT NUMBER: 127:173543
TITLE: Identification and localization of the Tgl protein, which is required for *Myxococcus xanthus* social motility
AUTHOR(S): Rodriguez-Soto, Jorge P.; Kaiser, Dale
CORPORATE SOURCE: Dep. Biochem., Stanford Univ. Sch. Med., Stanford, CA, 94305-5427, USA
SOURCE: Journal of Bacteriology (1997), 179(13), 4372-4381

CODEN: JOBAAY; ISSN: 0021-9193
 PUBLISHER: American Society for Microbiology
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Tgl protein is required for the prodn. of the type IV pili found at a pole of the *Myxococcus xanthus* cell. These pili are essential for social motility. Evidence is presented that Tgl is a membrane protein, based on expts. with polyclonal **antibody** specific for Tgl that was raised against the fusion proteins .beta.-galactosidase-Tgl and TrpE-Tgl. Immunoaffinity-purified **antibody** reacted with a protein in *M. xanthus* having an apparent mol. mass of 27.5 kDa as measured by sodium dodecyl sulfate-polyacrylamide gel electrophoresis, while the sequence of the tgl gene translates into a polypeptide of 27 kDa. Although these nos. are close, it is likely that the primary tgl translation product is **processed** and modified in *M. xanthus*. The N terminus has a signal peptidase II recognition sequence, cleavage of which is expected to remove 19 amino acid residues. When the tgl gene is expressed in *Escherichia coli*, the protein product consistently migrates faster in the gel than mature Tgl expressed in *M. xanthus*, suggesting a second modification by addn. which slows migration of the protein from *M. xanthus*. Tgl, as detected by its specific **antibody**, sediments with the membrane fraction of cells. It can be extd. with detergents but not with salt or by the addn. of chelators for divalent cations. In an equil. gradient, Tgl bands at the buoyant d. of membranes and with the NADH-oxidase activity. Intact cells failed to bind anti-Tgl **antibody**, and less than 2% of the total Tgl is released in sol. form from the periplasm. Yet, cells that had been osmotically shocked and **treated** with paraformaldehyde were able to react with the specific **antibody**-a reaction absent from cells with a deletion of the tgl transcription unit. Assuming that osmotic shock disrupts the outer membrane, the fractionation and localization data imply that Tgl is attached to the inner or outer membranes, from which it is exposed to the intermembranous space. Tgl is necessary for synthesis of pili in *M. xanthus* and is the only **pilus protein** that can be donated by other cells (stimulation). Tgl contains six tandem copies of the tetratrico peptide repeat structural motif. Its membrane localization, capacity for stimulation, and content of tetratrico structural repeats together suggest that Tgl may be necessary for the assembly of pilin subunits into filaments.

L34 ANSWER 18 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1996:512600 HCAPLUS

DOCUMENT NUMBER: 125:162920

TITLE: Assembly protein of enterotoxigenic *Escherichia coli*

AUTHOR(S): Sakellaris, H

CORPORATE SOURCE: School of Medicine, University of California, 30322, USA

SOURCE: Molecular Microbiology
 CODEN: MOMIEE

PUBLISHER: Blackwell

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Some strains of enterotoxigenic *E. coli* that cause diarrheal disease produce a class of pilus. For the assembly of the major-pilus, four linked genes, *cooB*, *A*, *C*, and *D*, have been identified. We determined the subcellular localization of *CooB*, *C* and *D*, and investigated the mol. interactions of these proteins using specific antisera. *CooD* appears to be an integral **pilus protein** because it co-purifies

with, and is strongly assocd. with, CS1 pili. In keeping with its role as an assembly protein, the CooD minor pilin (when overexpressed in CS1-piliated strains) was detected in periplasmic intermol. complexes with the major-pilin subunit CooA. CooB is an assembly protein found exclusively in the periplasma of CS1-piliated strains. CooB also forms periplasmic intermol. complexes with CooA, but does not constitute part of the final pilus structure. Immunoblot anal. of cell fractions showed that CooC is an outer membrane protein of CS1-piliated E. coli. Based on this information, we have proposed a model for CS1-pilus assembly which is very similar to the model for polymn. of the **PapA** pilin of uropathogenic E. coli. As the assembly proteins of Pap and CS1 pili are structurally unrelated, this may represent a case of convergent evolution.

L34 ANSWER 19 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1995:970077 HCAPLUS

DOCUMENT NUMBER: 124:53214

TITLE: Intraduodenal immunization with microencapsulated CFA/II induces a delayed, anti-CFA/II, IgG **antibody**-secreting spleen cell response

AUTHOR(S): Sau, Keya; Reid, Robert H.; McQueen, Charles; Boedeker, Edgar C.; Nellore, R.; Dalal, P.; Bhagat, H.R.

CORPORATE SOURCE: Department of Gastroenterology, Walter Reed Army Institute of Research, Washington, DC, 20307-5100, USA

SOURCE: Advances in Experimental Medicine and Biology (1995), 371B, 1469-74

CODEN: AEMBAP; ISSN: 0065-2598

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Spleen cells of immunized animals contained cells which were actively secreting IgG specifically against the CFA/II **pilus proteins**. Use of the microspheres **prevents** the adverse of the stomach contents on the proteins.

L34 ANSWER 20 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1995:610673 HCAPLUS

DOCUMENT NUMBER: 123:31234

TITLE: Recombinant pilC protein for use in antibacterial **vaccines**

INVENTOR(S): Meyer, Thomas Franz Ferdinand; Rudel, Thomas; Rylf, Roland Richard; Scheuerpflug, Ina Baerbel

PATENT ASSIGNEE(S): Max-Planck-Gesellschaft zur Foerderung der Wissenschaften EV, Germany

SOURCE: Ger., 30 pp.

CODEN: GWXXAW

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------|----------|
| DE 4336530 | C1 | 19950413 | DE 1993-4336530 | 19931026 |
| WO 9511919 | A2 | 19950504 | WO 1994-EP3494 | 19941025 |
| WO 9511919 | A3 | 19950713 | | |
| W: AU, CA, CN, JP, US, VN | | | | |
| RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE | | | | |
| AU 9479398 | A1 | 19950522 | AU 1994-79398 | 19941025 |
| EP 725792 | A1 | 19960814 | EP 1994-930216 | 19941025 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, IE, IT, LI, NL, SE | | | | |

JP 09507745 T2 19970812 JP 1994-512402 19941025
 US 6268171 B1 20010731 US 1996-637732 19960628
 PRIORITY APPLN. INFO.: DE 1993-4336530 A 19931026
 WO 1994-EP3494 W 19941025

AB A recombinant protein with the biol. activity of pilC protein is prepd. for use as a **vaccine** against pathogenic bacteria bearing type 4 pili, esp. *Neisseria gonorrhoeae* or *N. meningitidis*, or for prepn. of **antibodies** against these bacteria. The phase-variable signal peptide-encoding region of the recombinant gene encoding the protein, which contains a homopolymeric nucleotide sequence, is modified so that expression of the gene in the host cell is not influenced by phase variation by either (a) altering the homopolymeric sequence to an invariable heteropolymeric sequence or (b) replacing the phase-variable signal peptide-encoding region with a non-phase-variable nucleotide sequence which encodes a signal peptide compatible with secretion of the PilC protein. Thus, a bank of plasmids contg. *N. gonorrhoeae* genomic DNA was screened with appropriate probes for isolation of plasmids contg. the pilC2 gene. The homopolymeric G13 sequence in the isolated pTR27 plasmid was altered by site-directed mutagenesis with PCR, and the resulting non-phase-variable sequence was rendered inducible with iso-Pr .beta.-D-thiogalactoside by ligation to promoter P_{trc} and introduced into pilin-free *N. gonorrhoeae* N174 by conjugation for overexpression of the recombinant pilC2 gene. The pilC protein was isolated by Ni chelate affinity chromatog. PilC receptors were detected on human epithelial cells by binding to the cells of fluorescent particles covalently linked to pili of *N. gonorrhoeae*; free pilC protein inhibited binding of several *Neisseria* strains to the cells.

L34 ANSWER 21 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1995:398130 HCAPLUS
 DOCUMENT NUMBER: 122:182564
 TITLE: Detection of attachment of enterotoxigenic *Escherichia coli* (ETEC) to human small intestinal cells by enzyme immunoassay
 AUTHOR(S): Mynott, Tracey L.; Luke, Richard K. J.; Chandler, David S.
 CORPORATE SOURCE: School of Agriculture, La Trobe University, Bundoora, Victoria, 3085, Australia
 SOURCE: FEMS Immunology and Medical Microbiology (1995), 10(3-4), 207-18
 CODEN: FIMIEV; ISSN: 0928-8244
 PUBLISHER: Elsevier
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Simple immunoassays were developed to study the binding between enterocytes of the small intestine and other cell types, and enterotoxigenic *Escherichia coli* (ETEC). CFA/I or CFA/II **pilus protein** or CFA-pos. *E. coli* bacteria were immobilized in wells of microtiter plates and incubated with vesicles or crude mucus prepds. from human brush border enterocytes. Binding of the cell prepns. was detected by adding specific rabbit anti-brush border IgG followed by urease-labeled goat anti-rabbit IgG and urea substrate. The binding of purified CFA/I to human or rabbit small intestine, human oral epithelial cells or Caco-2 cells was detected with specific anti-CFA/I IgG. Both human brush border and mucus-derived prepns. were able to attach to ETEC. The binding was CFA-specific and strong enough to withstand several washings. In contrast, CFA/I did not bind to small intestinal cells of non-human small intestinal origin, indicating that there may be important differences in affinity between receptors present on human small intestinal cells and cells of non-human small intestinal origin. **Antibodies** directed

against human small intestinal and non-small intestinal cells did not cross-react with either prepn., indicating that receptors between these different cell sources are different. The EIA proved useful during the identification of a newly-recognized 15 kDa bacterial surface component of ETEC strain H10407P, which may function as a putative attachment factor. The EIAs developed in this study were easy to perform and multiple tests could be performed on small samples, including biopsy samples obtained during endoscopy.

L34 ANSWER 22 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1994:3130 HCAPLUS

DOCUMENT NUMBER: 120:3130

TITLE: Structural basis of pilus subunit recognition by the PapD chaperone

AUTHOR(S): Kuehn, Meta J.; Ogg, Derek J.; Kihlberg, Jan; Slonim, Lynn N.; Flemmer, Katarina; Bergfors, Terese; Hultgren, Scott J.

CORPORATE SOURCE: Dep. Mol. Microbiol., Washington Univ., St. Louis, MO, 63110, USA

SOURCE: Science (Washington, DC, United States) (1993), 262(5137), 1234-41

CODEN: SCIEAS; ISSN: 0036-8075

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The assembly of different types of virulence-assocd. surface fibers called pili in Gram-neg. bacteria requires periplasmic chaperones. PapD is the prototype member of the periplasmic chaperone family, and the structural basis of its interactions with pilus subunits was investigated. Peptides corresponding to the carboxyl terminus of pilus subunits bound PapD and blocked the ability of PapD to bind to the pilus **adhesin** PapG in vitro. The crystal structure of PapD complexed to the PapG carboxyl-terminal peptide was detd. to 3.0 Å. resoln. The peptide bound in an extended conformation with its carboxyl terminus anchored in the interdomain cleft of the chaperone via hydrogen bonds to invariant chaperone residues Arg and contacts between hydrophobic stabilized the complex and may Site-directed mutations in Arg to bind pilus subunits and med that the PapD-peptide crystal of the PapD-subunit interactic

Main chain hydrogen bonds and the chaperone

city. PapD

ation part

L34 ANSWER 23 OF 46 HCAPLUS COP

ACCESSION NUMBER: 1993:1545

DOCUMENT NUMBER: 118:1545

TITLE: Oral-int

caused by, antigens
encapsulated within, ble
microspheres

INVENTOR(S): Reid, Robert H.; Jarboe, Daniel; Casserly, Frederick J.; Boedeker, Edgar C.; Setterstrom, Jean A.

PATENT ASSIGNEE(S): United States Dept. of the Army, USA

SOURCE: PCT Int. Appl., 118 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 15

PATENT INFORMATION:

PATENT NO.

KIND DATE

APPLICATION NO. DATE

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WO 9219263      A1  19921112      WO 1991-US3328  19910513
W: AU, CA, FI, JP, NL, NO
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE
AU 9183036      A1  19921221      AU 1991-83036   19910513
PRIORITY APPLN. INFO.:      US 1991-690485  A  19910424
                               WO 1991-US3328  A  19910513

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AB An oral-intestinal **vaccine** against infections by enteropathogenic bacteria comprises DL-lactide-glycolide copolymer-encapsulated AF/R1 pilus of Escherichia coli RDEC-1 attachment, or similarly-encapsulated antigenic synthetic peptides contg. (FA/I (colonization factor antigen I) **pilus protein** T-cell or B-cell epitopes. Intraduodenal **vaccination** with the DL-lactide-glycolide copolymer-encapsulated AF/R1 pilus protected habits against diarrhea caused by E. coli RDEC-1.

L34 ANSWER 24 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1993:75674 HCAPLUS
DOCUMENT NUMBER: 118:75674
TITLE: Interactive surface in the PapD chaperone cleft is conserved in pilus chaperone superfamily and essential in subunit recognition and assembly
AUTHOR(S): Slonim, Lynn N.; Pinkner, Jerome S.; Branden, Carl Ivar; Hultgren, Scott J.
CORPORATE SOURCE: Sch. Med., Washington Univ., St. Louis, MO, 63110, USA
SOURCE: EMBO Journal (1992), 11(13), 4747-56
CODEN: EMJODG; ISSN: 0261-4189
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The assembly of adhesive pili in Gram-neg. bacteria is modulated by specialized periplasmic chaperone systems. PapD is the prototype member of the superfamily of periplasmic pilus chaperones. Previously, the alignment of chaperone sequences superimposed on the three dimensional structure of PapD revealed the presence of invariant, conserved and variable amino acids. Representative residues that protruded into the PapD cleft were targeted for site directed mutagenesis to investigate the **pilus protein** binding site of the chaperone. The ability of PapD to bind to fiber-forming pilus subunit proteins to **prevent** their participation in misassembly interactions depended on the invariant, solvent-exposed arginine-8 (R8) cleft residue. This residue was also essential for the interaction between PapD and a minor pilus adaptor protein. A mutation in the conserved methionine-172 (M172) cleft residue abolished PapD function when this mutant protein was expressed below a crit. threshold level. In contrast, radical changes in the variable residue glutamic acid-167 (E167) had little or no effect on PapD function. These studies provide the first mol. details of how a periplasmic pilus chaperone binds to nascently translocated pilus subunits to guide their assembly into adhesive pili.

L34 ANSWER 25 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1992:233004 HCAPLUS
DOCUMENT NUMBER: 116:233004
TITLE: Human tracheobronchial mucin: purification and binding to Pseudomonas aeruginosa
AUTHOR(S): Reddy, Molakala S.
CORPORATE SOURCE: Sch. Dent. Med., State Univ. New York, Buffalo, NY, 14214, USA
SOURCE: Infection and Immunity (1992), 60(4), 1530-5
CODEN: INFIBR; ISSN: 0019-9567
DOCUMENT TYPE: Journal

LANGUAGE: English

AB Colonization of the respiratory tract with *P. aeruginosa* is a serious problem in cystic fibrosis and seriously ill hospitalized **patients**. Human tracheobronchial mucin (HTBM), the major glycoprotein of human tracheobronchial secretions, is known to interact with this pathogen, which may then be cleared by mucociliary action. However, the mechanism of interaction is not known. To understand this process, pure HTBM was isolated from tracheobronchial secretions of a laryngectomized man. Following initial fractionation on Sepharose CL-2B, the HTBM-contg. fraction was subjected to reductive methylation and then gel filtration. Pure HTBM was employed in an overlay binding assay to identify the bacterial adhesin(s) and mucin receptors that participate in mucin-*P. aeruginosa* interactions. An approx. 16-kDa **nonpilus protein** component(s) of *P. aeruginosa* was the adhesin(s) for HTBM. The mucin receptor for the 16-kDa component(s) was found in the peptide moiety. This study confirms that *P. aeruginosa* utilizes the nonpilus adhesin(s) to bind to HTBM. Identification of the specificity of the HTBM-*P. aeruginosa* interactions can lead to a better understanding of the predominance of *P. aeruginosa* colonization in individuals with cystic fibrosis.

L34 ANSWER 26 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1992:231492 HCAPLUS

DOCUMENT NUMBER: 116:231492

TITLE: Production of a conserved adhesin by the human gastroduodenal pathogen *Helicobacter pylori*

AUTHOR(S): Doig, Peter; Austin, John W.; Kostrzynska, Magdalena; Trust, Trevor J.

CORPORATE SOURCE: Dep. Biochem. Microbiol., Univ. Victoria, Victoria, BC, V8W 3P6, Can.

SOURCE: Journal of Bacteriology (1992), 174(8), 2539-47

CODEN: JOBAAY; ISSN: 0021-9193

DOCUMENT TYPE: Journal

LANGUAGE: English

AB An adhesin protein with an approx. subunit mol. wt. of 19,600 was purified from *H. pylori*. The protein was loosely assocd. with the cell surface and was removed by gentle stirring or shearing. Released aggregates of the 19.6-kDa protein were removed from suspension by ultracentrifugation and sepd. from contaminating membranes by washing in 1.0% SDS. The SDS-insol. protein was purified further by Mono Q anion-exchange column chromatog. Electron microscopy of the purified adhesin demonstrated that it formed amorphous aggregates similar to the material attached to the bacterial cells and that the aggregates were morphol. distinct from typical fimbriae. Western blot (immunoblot) anal. with antiserum raised against the purified protein from 1 strain reacted with a protein with a similar subunit mol. wt. present in all 9 strains of *H. pylori* examd., but the protein was not present in other *Helicobacter* spp. examd. The N-terminal sequences of the 19.6-kDa protein purified from 3 different strains of *H. pylori* were identical for the 1st 28 amino acids, with the 10 amino-terminal residues showing limited sequence homol. with the TcpA **pilus protein** of *Vibrio cholerae*. The *H. pylori* 19.6-kDa protein assocd. both with human and rabbit erythrocytes and with human buccal epithelial cells. Polystyrene microspheres coated with the protein agglutinated human, horse, and rabbit erythrocytes, suggesting that this protein sp. could mediate adhesion between *H. pylori* and eukaryotic cells. This ability to act as an adhesin may make this protein an important virulence factor for *H. pylori* and hence a potential target for a **vaccine** and therapy.

L34 ANSWER 27 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1990:529112 HCAPLUS
 DOCUMENT NUMBER: 113:129112
 TITLE: The pili of *Aeromonas hydrophila*: identification of an environmentally regulated "mini pilin"
 AUTHOR(S): Ho, Alice Suk Yue; Mietzner, Timothy A.; Smith, Alan J.; Schoolnik, Gary K.
 CORPORATE SOURCE: Dep. Microbiol. Immunol., Stanford Univ., Stanford, CA, 94305, USA
 SOURCE: Journal of Experimental Medicine (1990), 172(3), 795-806
 CODEN: JEMEAV; ISSN: 0022-1007
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Ultrastructural studies of *A. hydrophila* AH26 revealed 2 distinctive pilus types: straight pili appear as brittle, rod-like filaments, whereas flexible pili are supple and curvilinear. Straight pili are produced constitutively under all tested conditions of growth. In contrast, the expression of flexible pili is regulated by phys. and chem. variables, being produced at 22 vs. 37.degree., in a liq. vs. a solid medium, and when the availability of free Fe is reduced by the presence of deferoxamine mesylate. Both **pilus proteins** were purified and biochem. and functionally characterized. The major repeating subunit of the straight pilus is a 17,000-mol.-wt. polypeptide with amino acid sequence homol. with *Escherichia coli* type 1 and Pap pili. The flexible pilus filament is a homopolymer composed of a novel 46 amino acid polypeptide. Resistance of the flexible pilus filament to disaggregation using various chem. **treatments** was demonstrated; its stability as a polymer and its apparent mech. strength seem to be conferred by a 20-amino-acid hydrophobic, COOH-terminal domain. Purified straight pili lack hemagglutinating function. In contrast, purified flexible pili cause the agglutination of human, guinea pig, ovine, bovine, and avian erythrocytes, although this property could only be demonstrated in the presence of divalent cations and was most evident at 4 vs. 22.degree.. These results suggest that the pathogenic and ecol. roles of the flexible pilus are related to this species' existence as a free-living organism in aquatic environments and its ability to cause infections, both in cold-blooded vertebrates and the human intestine.

L34 ANSWER 28 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1989:167539 HCAPLUS
 DOCUMENT NUMBER: 110:167539
 TITLE: Cloning of TcpA pilus gene of *Vibrio cholerae* and method for producing cholera **vaccine** from *V. cholerae*
 INVENTOR(S): Mekalanos, John J.; Taylor, Ronald K.
 PATENT ASSIGNEE(S): Harvard College, USA
 SOURCE: PCT Int. Appl., 31 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------|----------|
| WO 8808431 | A1 | 19881103 | WO 1988-US1409 | 19880429 |
| W: AU, DK, FI, HU, JP, NO | | | | |
| RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE | | | | |
| AU 8817257 | A1 | 19881202 | AU 1988-17257 | 19880429 |
| AU 629793 | B2 | 19921015 | | |

| | | | | |
|---|----|----------|----------------|----------|
| EP 358692 | A1 | 19900321 | EP 1988-904351 | 19880429 |
| EP 358692 | B1 | 19980603 | | |
| R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE | | | | |
| JP 02503914 | T2 | 19901115 | JP 1988-504162 | 19880429 |
| JP 2777894 | B2 | 19980723 | | |
| HU 53915 | A2 | 19901228 | HU 1988-3510 | 19880429 |
| HU 205372 | B | 19920428 | | |
| US 5098998 | A | 19920324 | US 1988-188016 | 19880429 |
| AT 166880 | E | 19980615 | AT 1988-904351 | 19880429 |
| US 5330753 | A | 19940719 | US 1992-855809 | 19920323 |
| PRIORITY APPLN. INFO.: | | | US 1987-43907 | 19870429 |
| | | | US 1988-188016 | 19880429 |
| | | | WO 1988-US1409 | 19880429 |

AB The tcpA (toxin-coregulated pilus) gene of *V. cholerae* is cloned and expressed in microorganisms. A method for stimulating prodn. of TcpA, the protein product of tcpA, as well as the cholera toxin B subunit during culturing of *V. cholerae* can be used to provide live, killed-cell, or subunit **vaccines** against cholera. The transposon deriv. TnpA was used to identify the tcpA gene in *V. cholerae* and to aid in the cloning of the tcpA-phoA chimeric gene formed by insertion of TnpA into the bacterial chromosome. This chimeric gene was then employed in identification and cloning of the complete tcpA gene. This gene complements tcpA mutants and encodes a 20.5 kilodalton protein. *E. coli* or *Salmonella typhimurium* transformed with the plasmid carrying this gene (pCS12G7) produce a protein identical in size and immunol. properties as TcpA. To produce **vaccines**, *V. cholerae* htx mutants deleted for the cholera toxin A subunit are cultured in medium contg. Tryptone, yeast ext., and NaCl, pH 6.5, at 25.degree. with moderate aeration (0.5-1 L/min). These conditions result in hyperpiliation and overprodn. of the cholera toxin B subunit.

L34 ANSWER 29 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1989:167053 HCAPLUS

DOCUMENT NUMBER: 110:167053

TITLE: Regulatory genes in the thermoregulation of *Escherichia coli* pili gene transcription

AUTHOR(S): Goeransson, Mikael; Forsman, Kristina; Uhlin, Bernt Eric

CORPORATE SOURCE: Dep. Microbiol., Univ. Umeaa, Umeaa, S-901 87, Swed.

SOURCE: Genes & Development (1989), 3(1), 123-30

CODEN: GEDEEP; ISSN: 0890-9369

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Expression of several different pilus adhesins by *E. coli* to thermoregulation. The surface-located fimbriae sent during growth at 37.degree. but are lower temps., such as 25.degree.. A gene mechanism, the role of differer cluster (pap) from a uropathoge trans, promoter cloning, mRNA anal., at the papI gene was identified as the pilus level of pilus adhesin gene tran subunit gene (papA) and several protein cistrons appeared to be c papB and papI gene products. Con regions indicated that none of the thermosensor. The chromosomal rpc did not appear to be required for pap tran thermoregulation of pilus gene transcription must be d that of the heat shock regulon. By overexpressing the pap gene product from an expression

plasmid in trans, the temp. regulation could be circumvented and prodn. of pilus adhesin at low temp. could be turned on. These results suggest that the level of mRNA encoding the PapI activator is limiting at low growth temps. and that thermoregulation is due to a determinant in the papI-papB intercistronic region.

L34 ANSWER 30 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1988:564428 HCAPLUS

DOCUMENT NUMBER: 109:164428

TITLE: Structure and antigenic properties of the tip-located P pilus proteins of uropathogenic Escherichia coli

AUTHOR(S): Lund, Bjoern; Lindberg, Frederik; Normark, Staffan

CORPORATE SOURCE: Dep. Microbiol., Univ. Umea, Umea, S-901 87, Swed.

SOURCE: Journal of Bacteriology (1988); 170(4); 1887-94

CODEN: JOBAAY; ISSN: 0021-9193

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Pyelonephritogenic E. coli frequently expresses pili which bind to Gal.alpha.(1-4)Gal receptors present on the uroepithelium. Binding of these pili is mediated by a pilus-assocd. adhesin, **PapG**, and not by the major subunit which constitutes the bulk of the pilus structure. The adhesin and two pilinlike proteins, **PapE** and **PapF** are present in only a few copies each at the pilus tip. Surface exposure of both **PapF** and **PapG** is required to achieve receptor-specific binding. The nucleotide sequences for the genes encoding the tip-assocd. proteins **PapE**, **PapF**, and **PapG** were detd. for two E. coli clones expressing P pili of serotypes F11 and F72 and compared with the corresponding sequences established for proteins of F13 pili. Specific antisera were used to study the cross-reactivity between the F13 tip proteins and the equiv. proteins in F11 and F72 pili. The major pilus subunit, **PapE**, varies its structure and antigenic properties among pili of different serotypes. In contrast, the **PapF** protein was highly conserved, and **PapF**-specific antisera raised against serotype F13 cross-reacted with the **PapF** proteins of both F11 and F72 serotypes. The **PapG** adhesin protein from F11 and F72 pili differed by only five amino acids out of 316 residues. However, the F13 adhesin showed only 45% amino acid homol. with the other two variants.

L34 ANSWER 31 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1988:201428 H

DOCUMENT NUMBER: 108:201428

TITLE: Identification of pilus tip adhesin

AUTHOR(S): Hanson, Mark

CORPORATE SOURCE: Dep. Biol. Sci., Univ. of California, San Diego, CA 92092, USA

SOURCE: Nature (London) 365:265-8

CODEN: NATU

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The type-1 pilus of Escherichia coli is composed of hair-like, multimeric adhesive organelles. The type-1 pilus, in 1 of several serol. variants, is expressed by nearly all E. coli strains, and its promotion of colonization by pathogenic bacteria and the protective effects of purified pilus vaccines suggest that it is important as a bacterial virulence factor. Both the adhesive

function and the serol. variation of the type-1 pilus have been attributed to the thousand or so pilin protein monomers making up the pilus rods. This idea has been contradicted by earlier observations on an *E. coli* strain expressing adhesion-defective pili. More recent genetic evidence also indicates that auxiliary pilus proteins are required for adhesive function. Three previously undetected integral minor proteins were identified on the type-1 pilus; 1 of them is the receptor-binding adhesin. This protein is antigenically conserved among strains with different pilin serotypes and is located at the pilus tip.

L34 ANSWER 32 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1987:530558 HCAPLUS

DOCUMENT NUMBER: 107:130558

TITLE: Fimbriae (pili): molecular basis of *Pseudomonas aeruginosa* adherence

AUTHOR(S): Paranchych, William; Sastry, Parimi A.; Volpel, Kathy; Loh, Bernadette A.; Speert, David P.

CORPORATE SOURCE: Dep. Biochem., Univ. Alberta, Edmonton, AB, T6G 2H7, Can.

SOURCE: Clinical and Investigative Medicine (1986), 9(2), 113-18

CODEN: CNVMDL; ISSN: 0147-958X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB *P. aeruginosa* Produces polar pili which promote the adherence of the organism to host mucosal surfaces and to blood-borne phagocytic cells such as polymorphonuclear leukocytes (PMNs). *Pseudomonas* Polar pili are flexible filaments of 52 .ANG. diam. and 2500 nm av. length. They consist of a single type of protein subunit, pilin, of mol. wt. 15,000, which is arranged in a helical mode of 5 subunits per turn and a pitch of 41 .ANG.. Purified whole pili and anti-pilus antiserum both inhibited the interaction of *P. aeruginosa* strains with human buccal epithelial cells and PMNs, suggesting that *Pseudomonas* adherence to these mammalian cells is pilus-mediated. No correlation was found between the level of cell surface fibronectin on human buccal endothelial cells and the adherence of *Pseudomonas* bacteria. *Pseudomonas* Adherence to buccal endothelial cells obtained from **patients** with cystic fibrosis was somewhat less than that to buccal endothelial cells obtained from healthy individuals. Fibronectin levels on buccal endothelial cells from **patients** with cystic fibrosis were not significantly different than those found on buccal endothelial cells from healthy individuals. Studies with peptide fragments derived from purified pili showed that only 1 peptide encompassing 23 amino acid residues at the C-terminus of the **pilus protein** inhibited in vitro adherence of *P. aeruginosa* PAK to human buccal cells. This peptide domain was tentatively assigned the receptor-binding function.

L34 ANSWER 33 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1987:405412 HCAPLUS

DOCUMENT NUMBER: 107:5412

TITLE: Antigenic variation of gonococcal surface proteins: effect on virulence

AUTHOR(S): Heckels, John E.; Virji, Mumtaz

CORPORATE SOURCE: Med. Sch., Univ. Southampton, Southampton, UK

SOURCE: FEMS Symposium (1986), 31(Protein-Carbohydr. Interact. Biol. Syst.), 89-93

CODEN: FEMSDW; ISSN: 0163-9188

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Antigenic shift in expression of pili and outer membrane protein II (PI)

occur during gonococcal infection. This antigenic variation influences the ability to adhere to different cell types and may permit colonization of different anatomical sites. Although PII expression is assocd. with increased killing by human polymorphonuclear leukocytes most clin. isolates express PII. With both pili and PII, the variable domains are immunodominant and little antigenic cross-reactivity is obsd. Thus antigenic shift during infection may circumvent immune differences. **Antibodies** to variable determinants are protective in model systems but only low levels of cross-reacting **antibodies** are produced in response to pili and these are directed against nonprotective epitopes.

L34 ANSWER 34 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1986:622615 HCAPLUS

DOCUMENT NUMBER: 105:222615

TITLE: Inhibition of K88-mediated adhesion of Escherichia coli to mammalian receptors by **antibiotics** that affect bacterial protein synthesis

AUTHOR(S): Chopra, Ian; Hacker, Keith

CORPORATE SOURCE: Med. Sch., Univ. Bristol, Bristol, BS8 1TD, UK

SOURCE: Journal of Antimicrobial Chemotherapy (1986), 18(4), 441-51

CODEN: JACHDX; ISSN: 0305-7453

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The ability of 10 inhibitors of bacterial protein synthesis to decrease adhesion of E. coli bearing K88afc fimbriae was examd. In the presence of the **antibiotics** at concns. below the min. inhibitory concn. (MIC) values, neomycin was the least effective inhibitor of adhesion and minocycline was the most active. The effect of minocycline on the synthesis of individual polypeptides encoded by the K88ac determinant was examd. in detail. The rate of synthesis of K88ac **pilus protein** in the presence of minocycline 0.75 mg/L (0.5 MIC) was less than that of total cell protein synthesis, suggesting that **pilus-protein** becomes progressively dild. in the outer membrane during exposure to this **antibiotic** concn. Furthermore, the synthesis of 2 helper polypeptides (mol. wts. of 27.5 and 27 kilodaltons), which are probably involved in secretion of K88ac **pilus protein** through the cell envelope, was particularly sensitive to minocycline. Thus, the ability of translational inhibitors to decrease K88ac-mediated adhesion probably results from direct inhibition of synthesis of fimbrial protein itself, together with inhibition of helper polypeptide synthesis.

L34 ANSWER 35 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1986:619918 HCAPLUS

DOCUMENT NUMBER: 105:219918

TITLE: Genetic manipulation of Escherichia coli K99 pilus production

AUTHOR(S): Newman, Karel, Jr.; Isaacson, Richard; Petre, Jean

CORPORATE SOURCE: Salsbury Lab., Inc., Charles City, IA, 50616, USA

SOURCE: Beltsville Symposia in Agricultural Research (1986), 10(Biotechnol. Solving Agric. Probl.), 307-16

CODEN: BSARDN; ISSN: 0160-3612

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A 7.15 kilobase(kb) BamHI restriction fragment contg. the gene encoding K99 pilus expression was removed from the wild-type 87.8-kb pK99 plasmid and inserted into a BamHI restriction-cleaved pBR322 recipient vehicle. The newly developed plasmid, designated pIX12, was first used to transform

recipient E. coli strain RH202 for final transfer to strain 711. The recombinant strain so developed was found to produce several-fold more **pilus protein** than the original plasmid donor.

Pilus protein is apparently expressed at the surface of the organism, and may be readily removed with shearing forces. The resulting effluent is concd. by ultrafiltration and may be subsequently quantitated by ELISA employing either an avidin-biotin-based dual epitope recognition assay or conventional polyclonal **antibody** based assay. Product is formulated on the basis of computer generated concn. values. The resulting compns. contg. the engineered protein induced the development of maternal **antibodies** capable of protecting offspring against mortality and severe morbidity.

L34 ANSWER 36 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1986:422936 HCAPLUS

DOCUMENT NUMBER: 105:22936

TITLE: Adhesin antigens, **antibodies** and DNA fragment encoding the antigen, methods and means for diagnosis and immunization etc

INVENTOR(S): Lindberg, Frederik Carl Peter; Lund, Bjoern Olof; Baaga, Britt Monika; Norgren, Mari Elisabet; Goeransson, Mikael; Uhlin, Bernt Eric Anund; Normark, Jan Staffan; Lark, David Lee

PATENT ASSIGNEE(S): Syn-Tek AB, Den.

SOURCE: PCT Int. Appl., 88 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|-------------|
| WO 8505037 | A1 | 19851121 | WO 1985-DK45 | 19850502 |
| W: AU, DK, FI, JP, KR, NO, SU, US | | | | |
| RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE | | | | |
| AU 8542994 | A1 | 19851128 | AU 1985-42994 | 19850502 |
| AU 593770 | B2 | 19900222 | | |
| EP 179887 | A1 | 19860507 | EP 1985-902487 | 19850502 |
| EP 179887 | B1 | 19930721 | | |
| R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE | | | | |
| JP 62501355 | T2 | 19870604 | JP 1985-502188 | 19850502 |
| JP 2974028 | B2 | 19991108 | | |
| AT 91629 | E | 19930815 | AT 1985-902487 | 19850502 |
| DK 8506099 | A | 19851230 | DK 1985-6099 | 19851230 |
| DK 171258 | B1 | 19960812 | | |
| FI 8600015 | A | 19860102 | FI 1986-15 | 19860102 |
| FI 93310 | B | 19941215 | | |
| FI 93310 | C | 19950327 | | |
| SU 1787165 | A3 | 19930107 | SU 1986-4001551 | 19860102 |
| US 4795803 | A | 19890103 | US 1986-817849 | 19860219 |
| US 5804198 | A | 19980908 | US 1995-447685 | 19950523 |
| US 6291649 | B1 | 20010918 | US 1998-75396 | 19980511 |
| PRIORITY APPLN. INFO.: | | | | |
| | | | DK 1984-2190 | A 19840502 |
| | | | EP 1985-902487 | A 19850502 |
| | | | WO 1985-DK45 | A 19850502 |
| | | | US 1986-817849 | A3 19860219 |
| | | | US 1988-245469 | B1 19880916 |
| | | | US 1991-678167 | B1 19910328 |
| | | | US 1992-856829 | B1 19920323 |

US 1993-123032 B1 19930920
US 1995-447685 A3 19950523

AB Adhesin polypeptide, an antigen constituting a minor component of the pili of pathogenic bacteria and responsible for the adhesion of these bacteria to mammalian cells, is used in prophylaxis and for prepn. of **vaccines** and of **antibodies** as diagnostic agents. Adhesin is produced free of structural components of pili by chem. synthesis or by use of recombinant DNA technol. In the latter case, its purifn. from the bacterial host is facilitated by fusion of the adhesin gene with the gene for a 2nd protein and purifn. of the encoded fused protein with methods specific for the 2nd protein, followed by optional cleavage to remove the 2nd protein. Thus, the genes for the major **pilus protein** subunit and the adhesin polypeptide were identified in a uropathogenic isolate of Escherichia coli J96, and the nucleotide sequence of adhesin DNA and the corresponding amino acid sequence for pilus adhesin were detd. A plasmid was constructed contg. adhesin DNA fused to the lacZ gene for cloning and expression in E. coli of an adhesin-.beta.-galactosidase fusion protein for use (with or without cleavage) as a **vaccine**.

L34 ANSWER 37 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1986:127829 HCAPLUS

DOCUMENT NUMBER: 104:127829

TITLE: Enhanced antigenicity and immunogenicity of gonococcal pilus-lipopolysaccharide conjugates

AUTHOR(S): Seid, Robert C., Jr.; Schneider, Herman; Nussbaum, Robert; Sidberry, Hazel; Sadoff, Jerald C.

CORPORATE SOURCE: Dep. Bact. Dis., Walter Reed Army Inst. Res., Washington, DC, 20307-5100, USA

SOURCE: Pathog. Neisseriae, Proc. Int. Symp., 4th (1985), Meeting Date 1984, 309-15. Editor(s): Schoolnik, Gary K. Am. Soc. Microbiol.: Washington, D. C. CODEN: 54ZAAE

DOCUMENT TYPE: Conference

LANGUAGE: English

AB A gonococcal pilus **vaccine** protein was chem. conjugated to lipopolysaccharide (LPS) derived from serum-sensitive gonococcal strain F62 and serum-resistant strain 7134. Prior to the coupling reaction, the LPSs were **treated** with alc. NaOH soln. to release ester-linked, lipid A fatty acids. The available carboxyl groups of deacylated LPS (D-LPS) were converted into N-hydroxysuccinimide-activated esters and were allowed to condense with free amino groups of gonococcal pili. As measured by the Limulus lysate assay, the D-LPS exhibited 1000-fold reduced toxicity compared with native LPS. Quant. carbohydrate anal. revealed 1.0 and 1.5 mol of F62 and 7134 D-LPS bound per pilus subunit, resp. Solid-phase RIA inhibition data revealed that conjugation restored, as well as enhanced, LPS antigenicity lost during the detoxification reaction. Also, solid-phase RIA-inhibition data indicated that the conjugates fully retained their capacity to bind with antipilus **antibody**. In complement-dependent serum bactericidal systems, the pilus-LPS conjugates, as well as D-LPS, were as effective as native LPS in inhibiting killing of gonococci. These serol. studies indicate that the chem. techniques employed did not appreciably affect **antigenic determinants** of either pili or LPS. Immunization of mice with the pilus-LPS (F62) conjugate induced an early response in anti-LPS **antibody** level similar to that of native LPS. D-LPS alone was not immunogenic. More interestingly, the pilus-LPS conjugate induced a rise in antipilus **antibody** 3-fold greater than that induced by pili alone. Mice receiving 2 injections, 1 wk apart, of the conjugate responded with a 7-fold increase in antipilus **antibody** level

which was measured 30 days after the last injection. These results clearly demonstrate that immunogenicity of both gonococcal D-LPS and pili is enhanced as a result of covalent conjugation.

L34 ANSWER 38 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
 ACCESSION NUMBER: 1986:116077 HCAPLUS
 DOCUMENT NUMBER: 104:116077
 TITLE: Vaccine against urinary infection
 INVENTOR(S): O'Hanley, Peter; Falkow, Stanley; Schoolnik, Gary K.; Lark, David
 PATENT ASSIGNEE(S): Leland Stanford Junior University, USA
 SOURCE: Eur. Pat. Appl., 29 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|----------|
| EP 161095 | A2 | 19851113 | EP 1985-303016 | 19850429 |
| EP 161095 | A3 | 19870603 | | |
| R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE | | | | |
| US 4736017 | A | 19880405 | US 1984-605287 | 19840430 |
| CA 1261550 | A1 | 19890926 | CA 1985-480171 | 19850426 |
| AU 8541851 | A1 | 19851107 | AU 1985-41851 | 19850430 |
| AU 582578 | B2 | 19890406 | | |
| JP 61000022 | A2 | 19860106 | JP 1985-94545 | 19850430 |
| PRIORITY APPLN. INFO.: | | | US 1984-605287 | 19840430 |

AB The Escherichia coli HU849 Gal-Gal pilus protein (pilin) and some of its amino acid sequences are vaccines against urinary infections. Thus, a vaccine was prepd. from E. coli HU849 pilin (amino acid sequence given) emulsified in Freund's adjuvant. The vaccine protected mice from urinary infection induced by E. coli J96.

L34 ANSWER 39 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
 ACCESSION NUMBER: 1986:63068 HCAPLUS
 DOCUMENT NUMBER: 104:63068
 TITLE: Gonococcal pilus: genetics and structure
 AUTHOR(S): So, M.; Billyard, E.; Deal, C.; Getzoff, E.; Hagblom, P.; Meyer, T. F.; Segal, E.; Tainer, J.
 CORPORATE SOURCE: Dep. Mol. Biol., Scripps Clin. Res. Found., La Jolla, CA, 92037, USA
 SOURCE: Current Topics in Microbiology and Immunology (1985), 118(Genet. Approaches Microb. Pathog.), 13-28
 CODEN: CTMIA3; ISSN: 0070-217X
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The pilus protein of Neisseria gonorrhoeae undergoes antigenic variation. Phase and antigenic variation in the pilus system are closely related phenomena. The regulation of pilus gene expression is reminiscent of yeast mating type interconversion (i.e. the occurrence of expression sites and silent pilus sequences) and Ig gene rearrangements. Evidence is also presented to show that the gonococcal pilin belongs to a class or family of pilins with a common subunit structure. Thus, like the topol. of tobacco mosaic virus coat protein, pilin is predicted to be composed of a bundle of 4 antiparallel alpha helices aligned along the long axis of a .apprx.25 .times. 25 .times. 70-.ANG. mol. The gonococcal pilin also is similar in polypeptide chain

length and in the formation of a long rod-like assembled structure consisting of many identical subunits.

L34 ANSWER 40 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1985:450925 HCAPLUS

DOCUMENT NUMBER: 103:50925

TITLE: *Pseudomonas* pili. Studies on **antigenic determinants** and mammalian cell receptors

AUTHOR(S): Paranchych, William; Sastry, Parimi A.; Drake, Debra; Pearlstone, Joyce R.; Smillie, Lawrence B.

CORPORATE SOURCE: Dep. Biochem., Univ. Alberta, Edmonton, AB, Can.

SOURCE: Antibiotics and Chemotherapy (Basel) (1985), 36(*Pseudomonas Aeruginosa*), 49-57

CODEN: ANBCB3; ISSN: 0066-4758

DOCUMENT TYPE: Journal

LANGUAGE: English

AB *P. aeruginosa* PAK pili are thin 5.2 nm diam. filaments contg. a single 15-kilodalton polypeptide subunit which is 144 amino acid residues in length. Studies on pili binding to a variety of synthetic sugars representing many di- tri- and tetrasaccharides structures found in mammalian glycoproteins and glycolipids failed to reveal any significant binding activity. However, a wide spectrum of binding activities was obsd. when a variety of structural proteins and enzymes were used as binding substrates. Of 30 proteins tested, phosphorylase b, pyruvate kinase, and aldolase showed highest pilus-binding activities. Thus, the PAK pilus receptor is probably a polypeptide, rather than an oligosaccharide. Using arginine-specific cleavage to produce 4 large peptides, several proteases to produce subfragments of the large peptides, and antipilus rabbit antiserum, PAK pilin was found to contain 4 **antigenic determinants**. Epitopes near the N- and C-termini were only weakly immunogenic, whereas 2 epitopes near the center of the **pilus protein** titrated .apprx.85% of the antipilus **antibodies**. Cleavage of the **pilus protein** into smaller peptides resulted in marked decreases in the affinity of antigenic peptides for their specific **antibodies**, suggesting that the immunodominant epitopes of PAK pilin are conformation-specific.

L34 ANSWER 41 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1985:109618 HCAPLUS

DOCUMENT NUMBER: 102:109618

TITLE: On the role of pili in transformation of *Neisseria gonorrhoeae*

AUTHOR(S): Mathis, Linda S.; Scocca, John J.

CORPORATE SOURCE: Sch. Hgy. Public Health, Johns Hopkins Univ., Baltimore, MD, 21205, USA

SOURCE: Journal of General Microbiology (1984), 130(12), 3165-73

CODEN: JGMIAN; ISSN: 0022-1287

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Transformation of competent transformable *N. gonorrhoeae* F62 to streptomycin resistance was unaffected by **antibodies** directed against the **pilus protein** (pilin) of this organism. The pilin component of either crude or purified pilus preps., sepd. by SDS gel electrophoresis and transferred to nitrocellulose, failed to bind detectable amts. of DNA; DNA binding to other gonococcal polypeptides was obsd. under these conditions. These results suggest that gonococcal pilin does not play a direct role in gonococcal transformation.

L34 ANSWER 42 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1984:83826 HCAPLUS

DOCUMENT NUMBER: 100:83826

TITLE: Enzyme-linked immunosorbent assay with a monoclonal **antibody** for detecting group A meningococcal antigens in cerebrospinal fluid

AUTHOR(S): Sugawara, Renee J.; Prato, Catherine M.; Sippel, John E.

CORPORATE SOURCE: Berkeley, Sch. Public Health, Univ. California, Oakland, CA, 94625, USA

SOURCE: Journal of Clinical Microbiology (1984), 19(2), 230-4
CODEN: JCMIDW; ISSN: 0095-1137

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Hybridomas were produced from spleen cells of BALB/c mice immunized with a membrane prepn. from *Neisseria meningitidis* group A strain 4402 and S194/5.XXOBU.14 myeloma cells. The hybridomas were screened for secretion of **antibodies** suitable for an ELISA diagnostic for group A meningococcal meningitis. One hybridoma **antibody**, 3G7, was directed against the **pilus protein**. This **antibody** bound to all 6 lipopolysaccharide and protein group A meningococcal of *Escherichia coli*, *Haemophilus influenzae* type b, or to .gtoreq.2 strains of *Streptococcus pneumoniae*, *N. gonorrhoeae*, and *Salmonella typhi*. The ELISA used an **antibody**, antigen, **antibody**-conjugate sandwich. Rabbit anti-meningococcal serum was the coating **antibody** for the **antibody** sandwich. Cerebrospinal fluids contained the bacterial antigens, and 3G7-alk. phosphatase conjugate was the detecting **antibody**. The monoclonal **antibody** conjugate ELISA system detected group A meningococcal antigens in 21 of 25 cerebrospinal fluid specimens that were pos. in an immune rabbit serum conjugate ELISA. Counterimmunoelectrophoresis detected meningococcal antigens in 16 of the same 25 cerebrospinal fluid samples.

L34 ANSWER 43 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1983:437053 HCAPLUS

DOCUMENT NUMBER: 99:37053

TITLE: Monoclonal **antibodies** against bacterial adhesins

INVENTOR(S): Sadowki, Peter L.

PATENT ASSIGNEE(S): Molecular Genetics, Inc., USA

SOURCE: Eur. Pat. Appl., 37 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------------------------|------|----------|-----------------|----------|
| EP 77734 | A2 | 19830427 | EP 1982-401906 | 19821018 |
| EP 77734 | A3 | 19840404 | | |
| R: BE, DE, FR, GB, IT, LU, NL | | | | |
| US 4443549 | A | 19840417 | US 1982-428622 | 19821007 |
| CA 1187822 | A1 | 19850528 | CA 1982-413150 | 19821008 |
| DK 8204621 | A | 19830420 | DK 1982-4621 | 19821018 |
| AU 8289454 | A1 | 19830428 | AU 1982-89454 | 19821018 |
| AU 560262 | B2 | 19870402 | | |
| JP 58099423 | A2 | 19830613 | JP 1982-182260 | 19821019 |
| US 4652448 | A | 19870324 | US 1983-558518 | 19831206 |

PRIORITY APPLN. INFO.:

US 1981-312993 19811019
US 1982-428622 19821007

AB Monoclonal **antibodies** to bacterial adhesins are produced with spleen cell hybridomas. Thus, (BALB/c) mice were hyperimmunized with *Escherichia coli* K-99 **pilus protein**. Their spleens were macerated and the cells were fused with BALB/c myeloma cells in polyethylene glycol-contg. soln. Fused cells were selected in HAT medium and **antibody**-producing fused cells were selected by ELISA anal. The cells were grown to confluence by limiting-diln. cloning and were then implanted into mice. After ascites development was obsd., the mice were tapped. Anti-K-99 monoclonal **antibodies** were recovered from ascites fluid by centrifugation. The **antibody** protected piglets against *E. coli* K-99-pos. diarrhea.

L34 ANSWER 44 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1983:121572 HCAPLUS

DOCUMENT NUMBER: 98:121572

TITLE: Localization of the major **antigenic determinant** of EDP208 pili at the N-terminus of the **pilus protein**

AUTHOR(S): Worobec, Elizabeth A.; Taneja, Ashok K.; Hodges, Robert S.; Paranchych, William

CORPORATE SOURCE: Dep. Biochem., Univ. Alberta, Edmonton, AB, T6G 2H7, Can.

SOURCE: Journal of Bacteriology (1983), 153(2), 955-61

CODEN: JOBAAY; ISSN: 0021-9193

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Trypsin digestion of pilin monomers from EDP208 conjugative pili causes cleavage at lysine12 to yield an N-terminal dodecapeptide, ET1 (mol. wt. .apprx.1500), and the remaining C-terminal fragment, ER (mol. wt. .apprx.10,000). Using the amino acid sequence for ET1 provided by L. S. Frost, et al. (1983), the N-terminal dodecapeptide was chem. synthesized, conjugated to bovine serum albumin, and subjected to immunol. studies. Antisera prepd. against intact EDP208 pili as well as against the synthetic ET1-albumin conjugate were used in expts. involving an enzyme-linked immunosorbent assay and electrophoretic transfer of proteins from SDS-polyacrylamide gels to nitrocellulose sheets. Both exptl. approaches showed strong reactivity between the synthetic dodecapeptide and antiserum raised against whole pili. Antiserum raised against the synthetic peptide was reactive against intact **pilus protein**, indicating that the N-terminal dodecapeptide is an important **antigenic determinant** of the EDP208 **pilus protein**. Addnl. studies showed that the C-terminal fragment, ER, may contain 1 or 2 addnl. antigenic sites.

L34 ANSWER 45 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1982:576157 HCAPLUS

DOCUMENT NUMBER: 97:176157

TITLE: Pilus expression in *Neisseria gonorrhoeae* involves chromosomal rearrangement

AUTHOR(S): Meyer, Thomas F.; Mlawer, Natania; So, Magdalene

CORPORATE SOURCE: Abt. Mol. Biol., Max-Planck-Inst. Med. Forsch., Heidelberg, Fed. Rep. Ger.

SOURCE: Cell (Cambridge, MA, United States) (1982), 30(1), 45-52

CODEN: CELLB5; ISSN: 0092-8674

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The *N. gonorrhoeae* **pilus protein**, a major

antigenic determinant on the cell's surface, is composed of identical subunits of .apprx.18 kilodaltons and plays a role in the infectivity and virulence of the organism. The gene encoding a gonococcal **pilus protein** was cloned into Escherichia coli, and 1 of these clones was used as a probe in hybridization studies to show that conversion of the pilus-pos. to pilus-neg. state in N. gonorrhoeae involves chromosomal rearrangement. Although the **pilus protein** is produced by E. coli, it does not appear to be assembled on the surface of the cell in native form.

L34 ANSWER 46 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1980:72359 HCAPLUS

DOCUMENT NUMBER: 92:72359

TITLE: Yeast cell agglutination by purified enterobacterial pili

AUTHOR(S): Korhonen, Timo K.

CORPORATE SOURCE: Dep. Gen. Microbiol., Univ. Helsinki, Helsinki, SF-00280/28, Finland

SOURCE: FEMS Microbiology Letters (1979), 6(6), 421-5
CODEN: FMLED7; ISSN: 0378-1097

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Yeast cells were agglutinated by purified **pilus proteins** from certain strains of Escherichia coli and Salmonella typhimurium, and the responses were mannose sensitive (agglutination **prevented** or reversed by D-mannose). For both yeast cells and a variety of erythrocytes the pattern of agglutinations produced by **pilus proteins** was generally the same as that produced by whole bacteria. A strain of E. coli that induced only mannose-resistant hemagglutination had no effect on yeast cells. Yeast agglutination was assocd. with the presence of type 1 pili, which may be virulence factors; therefore, a rapid screening test for such pili is of clin. significance.

=> d que stat 136

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L1      1 SEA FILE=REGISTRY ABB=ON VITAXIN/CN
L2      1 SEA FILE=REGISTRY ABB=ON "MEDI 493"/CN
L3      85 SEA FILE=HCAPLUS ABB=ON ?PILUS?(W)?PROTEIN?
L7      11 SEA FILE=HCAPLUS ABB=ON L3 AND (FIMH OR FIMA OR FIMG OR FIMF
      OR PAPG OR PAPA OR PAPE OR PAPF OR PAPK)
L8      5 SEA FILE=HCAPLUS ABB=ON L3 AND ?ADHESIN?(4A)(FIMH OR PAPG)
L14     23 SEA FILE=HCAPLUS ABB=ON L3 AND ?ANTIBOD?
L16     8 SEA FILE=HCAPLUS ABB=ON L3 AND ?IMMUNOGLOB?
L18     6 SEA FILE=HCAPLUS ABB=ON L3 AND ?ANTIGENIC?(W)?DETERMIN?
L19     1 SEA FILE=HCAPLUS ABB=ON L3 AND ?CARRIER?
L21     2 SEA FILE=HCAPLUS ABB=ON L3 AND ?PATIENT?
L22     1 SEA FILE=HCAPLUS ABB=ON L3 AND (?URINARY?(W)?TRACT?(W)?INFECT?
      OR UTI)
L24     12 SEA FILE=HCAPLUS ABB=ON L3 AND (?TREAT? OR ?PREVENT?)
L25     2 SEA FILE=HCAPLUS ABB=ON L24 AND (?PROCESS? OR ?PROCEED?)
L26     18 SEA FILE=HCAPLUS ABB=ON L3 AND ?VACCIN?
L28     1 SEA FILE=HCAPLUS ABB=ON L3 AND ?CHEMOTHERAP?
L30     1 SEA FILE=HCAPLUS ABB=ON L3 AND ?CYTOPROTECT?
L31     2 SEA FILE=HCAPLUS ABB=ON L3 AND ?ANTIBIOTIC?
L32     1 SEA FILE=HCAPLUS ABB=ON L3 AND (L1 OR ?VITAXIN)
L33     1 SEA FILE=HCAPLUS ABB=ON L3 AND (L2 OR ?MEDI?(W)493)
L34     46 SEA FILE=HCAPLUS ABB=ON (L7 OR L8 OR L14 OR L16 OR L18 OR L19
      OR L21 OR L22 OR L24 OR L25 OR L26 OR L28 OR L30 OR L31 OR L32
      OR L33)
L35     121 SEA L34
L36     67 DUP REMOV L35 (54 DUPLICATES REMOVED)

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=> d ibib abs 136 1-67

L36 ANSWER 1 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
 ACCESSION NUMBER: 2003-430264 [40] WPIDS
 CROSS REFERENCE: 2002-627351 [67]; 2002-636514 [68]; 2003-441430 [41];
 2003-441518 [41]; 2003-598483 [56]
 DOC. NO. CPI: C2003-113693
 TITLE: New angiotensin peptide moiety **carrier**
 conjugate comprising a **carrier** and an
 angiotensin peptide moiety, useful for **treating**
 or **preventing** a disorder associated with
 renin-activated angiotensin, e.g. hypertension or
 infarction.
 DERWENT CLASS: B04 D16
 INVENTOR(S): BACHMANN, M; JENNINGS, G; SONDEREGGER, I
 PATENT ASSIGNEE(S): (BACH-I) BACHMANN M; (JENN-I) JENNINGS G; (SOND-I)
 SONDEREGGER I; (CYTO-N) CYTOS BIOTECHNOLOGY AG
 COUNTRY COUNT: 101
 PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|--|------|----------|-----------|----|----|
| WO 2003031466 | A2 | 20030417 | (200340)* | EN | 49 |
| RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW | | | | | |
| US 2003157479 | A1 | 20030821 | (200356) | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---------------|-------------|-----------------|----------|
| WO 2003031466 | A2 | WO 2002-EP11219 | 20021007 |
| US 2003157479 | A1 | US 2001-331045P | 20011107 |
| | CIP of | US 2002-50902 | 20020118 |
| | Provisional | US 2002-396636P | 20020719 |
| | | US 2002-289454 | 20021107 |

PRIORITY APPLN. INFO: US 2002-396637P 20020719; US 2001-326998P
 20011005; US 2001-331045P 20011107; US
 2002-50902 20020118; WO 2002-IB166 20020121

AN 2003-430264 [40] WPIDS
 CR 2002-627351 [67]; 2002-636514 [68]; 2003-441430 [41]; 2003-441518 [41];
 2003-598483 [56]
 AB WO2003031466 A UPAB: 20030903
 NOVELTY - An angiotensin peptide moiety **carrier** conjugate
 comprising:
 (a) a **carrier** with at least one first attachment site; and
 (b) at least one angiotensin peptide moiety with at least one second
 attachment site.
 DETAILED DESCRIPTION - An angiotensin peptide moiety **carrier**
 conjugate comprising:
 (a) a **carrier** with at least one first attachment site; and
 (b) at least one angiotensin peptide moiety with at least one second

attachment site.

The **carrier** comprises a core particle, and the second attachment site is capable of association through at least one covalent bond to the first attachment site to form an ordered and repetitive angiotensin peptide moiety **carrier** conjugate.

INDEPENDENT CLAIMS are also included for the following:

(1) a pharmaceutical composition comprising one or more of the conjugates above, and a pharmaceutical **carrier** or excipient;

(2) a **vaccine** composition comprising a conjugate above, and an immunological **carrier** or excipient;

(3) immunizing an animal against an angiotensin peptide by administering a conjugate or **vaccine** composition defined above; and

(4) **treating** or **preventing** a physical disorder associated with the renin-activated angiotensin system by administering a conjugate or a **vaccine** composition defined above.

ACTIVITY - Hypotensive; Cerebroprotective; Cardiant; Nephrotropic; Ophthalmological; Immunostimulant.

No biological data given.

MECHANISM OF ACTION - **Vaccine**.

Female Balb/c mice were **vaccinated** with one of the 9 angiotensin peptide derivatives coupled to Q beta capsid protein without the addition of adjuvants. 50 micro g (Q beta -Angio 1-4 **vaccine**) or 20 micro g (Q beta -angio 5-9 **vaccine**) of total protein of each sample was diluted in PBS to 200 micro l, and injected subcutaneously on day 0 and day 14. Mice were bled retroorbitally on day 21, and their serum was analyzed using an angiotensin-specific ELISA. Results show that all **vaccinated** mice made specific IgG **antibodies** against the Angio 2 peptide as well as angiotensin I although mice immunized with the Angio 2, Angio 3 or Angio 4 peptide exhibited higher titers than those **vaccinated** with Angio 1 peptide correlating with the close similarity of the Angio 2, Angio 3 and Angio 4 peptides and angiotensin.

USE - The angiotensin peptide conjugate and compositions comprising them are useful for immunizing an animal against an angiotensin peptide, and for **treating** or **preventing** a physical disorder associated with renin-activated angiotensin system such as hypertension, stroke, infarction, congestive heart failure, kidney failure, and retinal hemorrhage (claimed). The conjugate is also useful for inducing immune responses, including producing **antibodies**.

Dwg.0/4

| | | |
|--------------------|---|-------------|
| L36 ANSWER 2 OF 67 | MEDLINE on STN | DUPLICATE 1 |
| ACCESSION NUMBER: | 2003139732 MEDLINE | |
| DOCUMENT NUMBER: | 22541565 PubMed ID: 12654852 | |
| TITLE: | Vector priming reduces the immunogenicity of Salmonella-based vaccines in Nrampl+/+ mice. | |
| AUTHOR: | Vindurampulle Christofer J; Attridge Stephen R | |
| CORPORATE SOURCE: | Department of Molecular Biosciences, The University of Adelaide, Adelaide, South Australia 5005, Australia. | |
| SOURCE: | INFECTION AND IMMUNITY, (2003 Apr) 71 (4) 2258-61. | |
| | Journal code: 0246127. ISSN: 0019-9567. | |
| PUB. COUNTRY: | United States | |
| DOCUMENT TYPE: | Journal; Article; (JOURNAL ARTICLE) | |
| LANGUAGE: | English | |
| FILE SEGMENT: | Priority Journals | |
| ENTRY MONTH: | 200305 | |
| ENTRY DATE: | Entered STN: 20030326 | |
| | Last Updated on STN: 20030513 | |
| | Entered Medline: 20030512 | |

AB The present studies in Nramp1(-/-) BALB/c and Nramp1(+/+) CBA mice question the significance of this genotype as a determinant of the level of gut colonization following oral administration of naturally attenuated or highly virulent *Salmonella* strains. In line with previous results in BALB/c hosts, vector priming of CBA mice with *Salmonella enterica* serovar Stanley was found to significantly compromise the immunogenicity of a recombinant construct expressing a foreign **pilus protein**

L36 ANSWER 3 OF 67 MEDLINE on STN DUPLICATE 2
 ACCESSION NUMBER: 2002733750 MEDLINE
 DOCUMENT NUMBER: 22384150 PubMed ID: 12496178
 TITLE: Impact of vector priming on the immunogenicity of recombinant *Salmonella* **vaccines**.
 AUTHOR: Vindurampulle Christofer J; Attridge Stephen R
 CORPORATE SOURCE: Department of Molecular Biosciences, The University of Adelaide, Adelaide, South Australia 5005, Australia.
 SOURCE: INFECTION AND IMMUNITY, (2003 Jan) 71 (1) 287-97.
 Journal code: 0246127. ISSN: 0019-9567.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 200302
 ENTRY DATE: Entered STN: 20021227
 Last Updated on STN: 20030211
 Entered Medline: 20030210

AB There are conflicting reports concerning the impact of prior vector priming on the immunogenicity of recombinant-*Salmonella*-based **vaccines**. A comparison of experimental protocols identified two variables which might account for this inconsistency: the potential of the vector strain to colonize the murine gut-associated lymphoid tissue (GALT) and the nature of the foreign antigen subsequently delivered by the recombinant *Salmonella* construct. The former was investigated by constructing an *aroA* mutant of the *Salmonella enterica* serovar Stanley vector previously used in our laboratory. Although the introduction of an *aroA* mutation had surprisingly little effect on GALT colonization, it did reduce the strength of antilipopolysaccharide (anti-LPS) **antibody** responses and the impact of vector priming. Studies were also performed to ascertain the extent to which any observed hyporesponsiveness consequent upon vector priming might be determined by the characteristics of the foreign antigen. *S. enterica* serovar Stanley was used to deliver either of two *Escherichia coli* antigens, K88 **pilus protein** or the LT-B toxin subunit, to vector-primed mice. Both serum **immunoglobulin G** (IgG) and intestinal IgA responses to K88 were completely abolished, and those to LT-B were significantly reduced, as a consequence of vector priming. When similar experiments were performed with an *aroA* *S. enterica* serovar Dublin vector, responses to K88 were significantly reduced but those to LT-B were unaffected by vector priming. Paradoxically, a priming infection with this vector induced stronger anti-LPS **antibody** responses but was less likely to elicit a state of hyporesponsiveness to subsequently presented foreign antigen. The impact of vector priming thus depends on both the *Salmonella* strain used and the nature of the foreign antigen, but our present data strengthen concerns that preexisting antivector immunity represents a serious threat to the *Salmonella*-based **vaccine** strategy.

L36 ANSWER 4 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
 ACCESSION NUMBER: 2002-626749 [67] WPIDS
 DOC. NO. CPI: C2002-176631

TITLE: Novel protein construct for **treating** diseases, has **pilus protein** portion comprising single **pilus protein**, linked to effector portion not having bacterial **pilus-protein** or chaperone or having **pilus protein**.

DERWENT CLASS: B04 D16

INVENTOR(S): HULTGREN, S J; LANGERMANN, S; SAUER, F G

PATENT ASSIGNEE(S): (HULT-I) HULTGREN S J; (LANG-I) LANGERMANN S; (SAUE-I) SAUER F G; (MEDI-N) MEDIMMUNE INC; (UNIW) UNIV WASHINGTON

COUNTRY COUNT: 96

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|--|------|----------|-----------|----|----|
| US 2002086037 | A1 | 20020704 | (200267)* | | 27 |
| WO 2002059156 | A2 | 20020801 | (200267) | EN | |
| RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW | | | | | |
| W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW | | | | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---------------|------|-------------|--------------------------|
| US 2002086037 | A1 | Provisional | US 2000-257880P 20001222 |
| | | | US 2001-27350 20011228 |
| WO 2002059156 | A2 | | WO 2001-US51037 20011220 |

PRIORITY APPLN. INFO: US 2000-257880P 20001222; US 2001-27350 20011228

AN 2002-626749 [67] WPIDS

AB US2002086037 A UPAB: 20021018

NOVELTY - An isolated protein construct (I) comprises a **pilus protein** portion (P1) linked to an effector portion (P2), where P1 comprises single **pilus protein** including its active fragments and is not attached to a bacterial cell, and P2 does not comprise all or part of bacterial **pilus-protein** or bacterial chaperone, or P2 comprises a **pilus protein** including its active fragments and (I) does not comprise a pilus.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) an **antibody** specific for (I);
- (2) preparing (I), by linking a **pilus protein** moiety, or its active fragment, to an effector moiety through a bridging structure comprising a donor strand;
- (3) a composition comprising (I), where (I) is suspended in a pharmacologically acceptable **carrier**; and
- (4) a **vaccine** comprising (I) suspended in a pharmacologically acceptable **carrier**.

ACTIVITY - Antibacterial.

MECHANISM OF ACTION - **Vaccine** (claimed). No supporting data given.

USE - (C) is useful for **treating** or **preventing** a disease e.g. **urinary tract infection** caused by a bacterium, particularly Escherichia coli (claimed). (I) is useful as

immunogen fused stimulate the production of **antibodies** for use in passive immunotherapy, for use as diagnostic reagents, and for use as reagents in other **processes** such as affinity chromatography.
Dwg.0/8

L36 ANSWER 5 OF 67 EMBASE COPYRIGHT 2003 ELSEVIER INC. ALL RIGHTS RESERVED.
on STN

ACCESSION NUMBER: 2002049051 EMBASE
TITLE: Molecular analyses of the natural transformation machinery and identification of pilus structures in the extremely thermophilic bacterium *Thermus thermophilus* strain HB27.
AUTHOR: Friedrich A.; Prust C.; Hartsch T.; Henne A.; Averhoff B.
CORPORATE SOURCE: B. Averhoff, Institut fur Genetik/Mikrobiologie, Ludwig-Maximilians-Universitat, Maria-Ward-Strasse 1a, 80638 Munich, Germany. B.Averhoff@lrz.uni-muenchen.de
SOURCE: Applied and Environmental Microbiology, (2002) 68/2 (745-755).
Refs: 58
ISSN: 0099-2240 CODEN: AEMIDF
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English

AB *Thermus thermophilus* HB27, an extremely thermophilic bacterium, exhibits high competence for natural transformation. To identify genes of the natural transformation machinery of *T. thermophilus* HB27, we performed homology searches in the partially completed *T. thermophilus* genomic sequence for conserved competence genes. These analyses resulted in the detection of 28 open reading frames (ORFs) exhibiting significant similarities to known competence proteins of gram-negative and gram-positive bacteria. Disruption of 15 selected potential competence genes led to the identification of 8 noncompetent mutants and one transformation-deficient mutant with a 100-fold reduced transformation frequency. One competence protein is similar to DprA of *Haemophilus influenzae*, seven are similar to type IV **pilus proteins** of *Pseudomonas aeruginosa* or *Neisseria gonorrhoeae* (PilM, PilN, PilO, PilQ, PilF, PilC, PilD), and another deduced protein (PilW) is similar to a protein of unknown function in *Deinococcus radiodurans* R1. Analysis of the piliation phenotype of *T. thermophilus* HB27 revealed the presence of single pilus structures on the surface of the wild-type cells, whereas the noncompetent pil mutants of *Thermus*, with the exception of the pilF mutant, were devoid of pilus structures. These results suggest that pili and natural transformation in *T. thermophilus* HB27 are functionally linked.

L36 ANSWER 6 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 2003:151398 BIOSIS
DOCUMENT NUMBER: PREV200300151398
TITLE: Sequence analysis demonstrates conservation of **FimH** and variability of **FimA** throughout avian pathogenic *Escherichia coli* (APEC).
AUTHOR(S): Vandemaele, Frederic (1); Vandekerchove, Dominique; Vereecken, Monita; Derijcke, Jef; Dho-Moulin, Maryvonne; Goddeeris, Bruno (1)
CORPORATE SOURCE: (1) Laboratory of Physiology and Immunology of Domestic Animals, Catholic University Leuven, Kasteelpark Arenberg 30, 3001, Leuven, Belgium Belgium
SOURCE: Mededelingen Faculteit Landbouwkundige en Toegepaste

Biologische Wetenschappen Universiteit Gent, (2002) Vol.
67, No. 4, pp. 265-268. print.
ISSN: 1373-7503.

DOCUMENT TYPE: Article
LANGUAGE: English

L36 ANSWER 7 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
ACCESSION NUMBER: 2002-055561 [07] WPIDS
DOC. NO. CPI: C2002-015922
TITLE: New composition, useful for vaccine production,
comprises antigen or **antigenic
determinant** and non-natural molecular scaffold
comprising organizer and core particle such as bacterial
pilus or pilin protein.
DERWENT CLASS: B04 D16
INVENTOR(S): BACHMANN, M; DUNANT, N; LECHENER, F; SEBBEL, P; TISSOT,
A; HENNECKE, F; LECHNER, F; NIEBA, L; RENNER, W A
PATENT ASSIGNEE(S): (BACH-I) BACHMANN M; (CYTO-N) CYTOS BIOTECHNOLOGY AG;
(DUNA-I) DUNANT N; (LECH-I) LECHENER F; (SEBB-I) SEBBEL
P; (TISS-I) TISSOT A
COUNTRY COUNT: 96
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|--|------|----------|-----------|----|-----|
| WO 2001085208 | A2 | 20011115 | (200207)* | EN | 287 |
| RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW | | | | | |
| W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW | | | | | |
| AU 2001052458 | A | 20011120 | (200219) | | |
| EP 1278542 | A2 | 20030129 | (200310) | EN | |
| R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR | | | | | |
| US 2003054010 | A1 | 20030320 | (200323) | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---------------|----------------|-----------------|----------|
| WO 2001085208 | A2 | WO 2001-IB741 | 20010502 |
| AU 2001052458 | A | AU 2001-52458 | 20010502 |
| EP 1278542 | A2 | EP 2001-925778 | 20010502 |
| | | WO 2001-IB741 | 20010502 |
| US 2003054010 | A1 Provisional | US 2000-202341P | 20000505 |
| | | US 2001-848616 | 20010504 |

FILING DETAILS:

| PATENT NO | KIND | PATENT NO |
|---------------|-------------|---------------|
| AU 2001052458 | A Based on | WO 2001085208 |
| EP 1278542 | A2 Based on | WO 2001085208 |

PRIORITY APPLN. INFO: US 2000-202341P 20000505; US 2001-848616
20010504

AN 2002-055561 [07] WPIDS
AB WO 200185208 A UPAB: 20020130

NOVELTY - A composition (I) comprising:

(a) a non-natural molecular scaffold (MS) which comprises a core particle such as a bacterial pilus or pilin protein, a recombinant form of the protein, a virus-like particle or a hepatitis B virus capsid protein, and an organizer; and

(b) an antigen or **antigenic determinant** (D), where MS and (D) interact to form an ordered and repetitive antigen array, is new.

DETAILED DESCRIPTION - A composition (I) comprising:

(1) a non-natural molecular scaffold (MS) comprising:

(a) a bacterial pilus or pilin protein or its recombinant form;

(b) a virus-like particle which is a dimer or multimer of a polypeptide comprising amino acids 1-147 of a sequence comprising 152 amino acids fully defined in the specification as core particle or a sequence having at least 65%, preferably 95% sequence identity to the sequence;

(c) a hepatitis B virus (HBV) capsid protein comprising a sequence of 183, 185, 149 or 152 amino acids fully defined in the specification; and

(d) an organizer; and

(2) an antigen or **antigenic determinant** (D), where MS and D interact to form an ordered and repetitive antigen array, is new.

INDEPENDENT CLAIMS are also included for the following:

(1) a composition (II) comprising a bacterial pilus or a bacterial pilin polypeptide to which an antigen or **antigenic determinant** has been attached by a covalent bond;

(2) a pharmaceutical composition (III) comprising (I) or (II);

(3) a **vaccine** composition (IV) comprising (I) or (II); and

(4) preparation of (I) or (II).

ACTIVITY - Antiarthritic; antidiabetic; antiallergic; antiinflammatory; anti-human immunodeficiency virus; virucide; antibacterial; cytostatic; neuroprotective; tuberculostatic; protozoacide.

MECHANISM OF ACTION - **Vaccine**. No supporting data is given.

USE - (I), (II) or (IV) is useful for immunization, by administering (I), (II) or (IV) to a subject, where the administration produces an immune response, such as humoral, cellular or protective immune response, preferably a Th type 2 T-helper (Th2) response that is specific for (D). The administration induces **antibodies** specific for (D) of a subtype corresponding to the Th2 subtype in the subject. The subject does not generate a Th2 subtype that is specific for pilus or pilin polypeptide or (D) (claimed). (I) or (II) is useful for the production of **vaccines** for **prevention** of infectious diseases such as human immunodeficiency virus, viral hepatitis, measles, chicken pox, pneumonia, tuberculosis, syphilis, malaria, and for **treating** allergy, cancer, and chronic diseases induced or accelerated by a Th1 type immune response, such as arthritis, colitis, diabetes and multiple sclerosis. (I) is useful to generate defined self-specific **antibodies** and specific immune responses of the Th2 type.

ADVANTAGE - (I) allows the creation of highly efficient **vaccines** against infectious diseases, and for **treating** allergy, cancer, and chronic diseases induced or accelerated by a Th1 type immune response.

Dwg.0/20

L36 ANSWER 8 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
 ACCESSION NUMBER: 2001-159513 [16] WPIDS
 DOC. NO. CPI: C2001-047434
 TITLE: Novel polypeptide useful as **vaccines** for
prevention of diseases e.g. **urinary**
tract infections, caused by

Enterobacteriaceae, has specific domains derived from
pilus-protein like **FimA** of
 Escherichia coli.

DERWENT CLASS: B04 D16
 INVENTOR(S): HULTGREN, S J; LANGERMANN, S
 PATENT ASSIGNEE(S): (MEDI-N) MED IMMUNE INC; (MEDI-N) MEDIMMUNE INC; (UNIW)
 UNIV WASHINGTON
 COUNTRY COUNT: 89
 PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|------|----------|-----------|----|----|
| WO 2001005827 | A1 | 20010125 | (200116)* | EN | 44 |
| RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW | | | | | |
| W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW | | | | | |
| AU 2000061005 | A | 20010205 | (200128) | | |
| EP 1196437 | A1 | 20020417 | (200233) | EN | |
| R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI | | | | | |
| JP 2003505044 | W | 20030212 | (200321) | | 43 |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---------------|------|-----------------|----------|
| WO 2001005827 | A1 | WO 2000-US19277 | 20000714 |
| AU 2000061005 | A | AU 2000-61005 | 20000714 |
| EP 1196437 | A1 | EP 2000-947385 | 20000714 |
| | | WO 2000-US19277 | 20000714 |
| JP 2003505044 | W | WO 2000-US19277 | 20000714 |
| | | JP 2001-511484 | 20000714 |

FILING DETAILS:

| PATENT NO | KIND | PATENT NO |
|---------------|-------------|---------------|
| AU 2000061005 | A Based on | WO 2001005827 |
| EP 1196437 | A1 Based on | WO 2001005827 |
| JP 2003505044 | W Based on | WO 2001005827 |

PRIORITY APPLN. INFO: US 1999-144013P 19990715

AN 2001-159513 [16] WPIDS

AB WO 200105827 A UPAB: 20010323

NOVELTY - An isolated polypeptide (I) comprising one or more portions of
FimA, such as **FimA** domain loop (ADL)-1, ADL-2, ADL-3,
 ADL-4 and ADL-5, where the polypeptide is other than **FimA** or a
 polypeptide comprising **FimA**, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the
 following:

- (1) a nucleic acid encoding (I);
- (2) a **vaccine** composition comprising (I);
- (3) **antibodies** specific for (I);
- (4) a vector comprising the nucleic acid of (1); and
- (5) a cell comprising the vector of (4).

ACTIVITY - Antibacterial.

No supporting biological data is given.

MECHANISM OF ACTION - Vaccine.

USE - The vaccine is useful for prevention of diseases, such as urinary tract infection caused by a bacterium of the family Enterobacteriaceae, especially Escherichia coli in animals, in particular humans. The antibodies are used for treating the disease described above (claimed).
Dwg.0/1

L36 ANSWER 9 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
ACCESSION NUMBER: 2001-138315 [14] WPIDS
DOC. NO. CPI: C2001-040807
TITLE: Immunogenic complexes and polypeptides for **vaccinating** against urinary tract disease, comprises a **pilus protein** component and a bacterial chaperone.
DERWENT CLASS: B04 D16
INVENTOR(S): BARNHART, M; HULTGREN, S J; KNIGHT, S; PINKNER, J S; SAUER, F; WAKSMAN, G
PATENT ASSIGNEE(S): (MEDI-N) MED IMMUNE INC; (MEDI-N) MEDIMMUNE INC
COUNTRY COUNT: 89
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|------|----------|-----------|----|----|
| WO-2001004148 | A2 | 20010118 | (200114)* | EN | 60 |
| RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW | | | | | |
| W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW | | | | | |
| AU 2000060940 | A | 20010130 | (200127) | | |
| EP 1194561 | A2 | 20020410 | (200232) | EN | |
| R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI | | | | | |
| JP 2003504083 | W | 20030204 | (200320) | | 98 |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---------------|------|-------------|------|
| WO 2001004148 | A2 | WO 2000-US | |
| AU 2000060940 | A | AU 2000-60 | |
| EP 1194561 | A2 | EP 2000-94 | |
| | | WO 2000-U' | |
| JP 2003504083 | W | WO 2000-U | |
| | | JP 2001-5 | |

FILING DETAILS:

| PATENT NO | KIND | PATENT NO |
|---------------|-------------|---------------|
| AU 2000060940 | A Based on | WO 20010 |
| EP 1194561 | A2 Based on | WO 20010 |
| JP 2003504083 | W Based on | WO 2001004148 |

PRIORITY APPLN. INFO: US 2000-184442P 20000223; US 1999-143582P
19990713; US 1999-144359P 19990716

AN 2001-138315 [14] WPIDS
AB WO 200104148 A UPAB: 20010312

NOVELTY - Immunogenic complexes (I) and polypeptides (II) comprising a **pilus protein** component and a donor complement portion as part of the same amino acid sequence, are new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) a single polypeptide or polypeptide complex comprising (II) and an adhesin;
- (2) a single polypeptide or polypeptide complex comprising (II) and a pilin;
- (3) a polynucleotide (III) comprising a coding region for (II);
- (4) an **antibody** (IVa) specific for an immunogenic complex selected from (I) and/or (II);
- (5) an **antibody** (IVb) specific for (II);
- (6) a genetically engineered cell expressing (IVa) and/or (IVb);
- (7) a genetically engineered cell expressing (III);
- (8) a vector comprising (III);
- (9) a genetically engineered cell expressing (II);
- (10) a composition comprising (IVa) or (IVb) suspended in a pharmacologically acceptable **carrier**, diluent or excipient;
- (11) a **vaccine** composition (Va) comprising and immunogenically effective amount of (I), suspended in a pharmacologically acceptable **carrier**, diluent or excipient;
- (12) a **vaccine** composition (Vb) comprising an immunogenically effective amount of (II), suspended in a pharmacologically acceptable **carrier**, diluent or excipient;
- (13) a method (X) of **preventing** a disease in a mammal, comprising administering (Va) or (Vb); and
- (14) a method of producing (II).

ACTIVITY - Antibacterial

MECHANISM OF ACTION - **Vaccine**.

Three dosages (15, 3 and 0.6 micro g) of donor strand complemented (dsc) immunogen (the **adhesin** molecule **FimH**) were evaluated. Complete Freund's adjuvant/incomplete Freund's adjuvant (CFA/IFA) were used as the adjuvant and 10, 6 and 1.2 micro g FimCH (a complex of the **FimH** and the chaperone FimC) was used for comparison. The NU 14 strain of Escherichia coli was administered the dosages intraurethrally, and the results indicate that dscFimH offered significant protection at the 3 micro g and 15 micro g doses compared with the control (CFA/IFA) and high dose FimCH.

USE - **Vaccine** compositions (Va and Vb) are useful for **preventing** urinary tract disease in a human caused by the bacterium family enterobacteriaceae specifically Escherichia coli and a composition comprising (IV) or (IVb) is useful for **treating** the disease (claimed).

ADVANTAGE - Pilus associated **adhesins**, such as **FimH** are relatively conserved proteins among different species and strains of bacteria, therefore **vaccines** incorporating the **FimH** antigen exhibit a broad spectrum of protection compared with current pilus-fiber based **vaccines**.

Dwg.0/12

| | | | |
|-------------------|---|---------------------|-------------|
| L36 | ANSWER 10 OF 67 | MEDLINE on STN | DUPLICATE 3 |
| ACCESSION NUMBER: | 2001451349 | MEDLINE | |
| DOCUMENT NUMBER: | 21388411 | PubMed ID: 11497451 | |
| TITLE: | Detection of shared magnetic antigenic determinants on whole Moraxella bovis pili by use of antisera to cyanogen bromide-cleaved M. bovis pilus protein . | | |
| AUTHOR: | Greene W H; Grubbs S T; Potgieter L N | | |
| CORPORATE SOURCE: | Department of Comparative Medicine, University of Tennessee | | |

SOURCE: College of Veterinary Medicine, Knoxville 37901, USA.
AMERICAN JOURNAL OF VETERINARY RESEARCH, (2001 Aug) 62 (8)
1279-84.
Journal code: 0375011. ISSN: 0002-9645.

PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200201
ENTRY DATE: Entered STN: 20010813
Last Updated on STN: 20020125
Entered Medline: 20020122

AB OBJECTIVE: To determine the ability of antisera against cyanogen bromide-cleaved pili from 4 strains of *Moraxella bovis* to react with whole or nondenatured pili. SAMPLE POPULATION: Antisera to 4 strains of *M. bovis* produced by New Zealand White rabbits. PROCEDURE: Pili from 4 strains of *M. bovis* were collected and purified. Pilus proteins (pilin) were cleaved, using cyanogen bromide. Whole pilus and cyanogen bromide-cleaved pilin were injected into rabbits. Antisera were serially diluted, reacted with 4 strains of *M. bovis*, and examined by immunoelectron microscopy and indirect immunofluorescence. RESULTS: Antisera to whole pili aggregated and distorted pili from homologous strains, but pili from heterologous strains were unaffected. Antisera to cleaved pilin fragments resulted in partial aggregation and thickening of homologous and heterologous pili, suggestive of heterospecific antibodies. Attachment of antibodies to pili was detected by indirect immunofluorescence, indicating a strong reaction of antisera to whole pili with homologous pili. Weak cross-reactions were evident with certain heterologous strains. In contrast, antisera to cleaved pilin fragments reacted strongly with pili from homologous and heterologous strains. CONCLUSIONS AND CLINICAL RELEVANCE: We detected shared antigenic determinants on pili from various strains of *M. bovis* that were not immunogenic in intact pili. These sites were immunogenic after cleavage of pilus protein with cyanogen bromide, and antisera produced to protein fragments reacted with whole pili from heterologous strains of the organism. Vaccines produced from cyanogen bromide-treated pili may induce broader immunity against infectious bovine keratoconjunctivitis than that provided by currently available vaccines.

L36 ANSWER 11 OF 67 MEDLINE on STN DUPLICATE 4
ACCESSION NUMBER: 2001423624 MEDLINE
DOCUMENT NUMBER: 21247219 PubMed ID: 11348773
TITLE: Immunoblot analysis of cyanogen bromide-cleaved *Moraxella bovis* pilin reveals presence of shared antigenic determinants on pili from heterologous strains.

AUTHOR: Greene W H; Grubbs S T; Potgieter L N
CORPORATE SOURCE: Department of Comparative Medicine, College of Veterinary Medicine, University of Tennessee, P.O. Box 850, Knoxville, TN 37901-1071, USA.

SOURCE: VETERINARY MICROBIOLOGY, (2001 Jun 22) 80 (4) 365-72.
Journal code: 7705469. ISSN: 0378-1135.

PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200107
ENTRY DATE: Entered STN: 20010730
Last Updated on STN: 20010730

Entered Medline: 20010726

AB Moraxella bovis **pilus proteins**, collected and purified from four strains of M. bovis, were cleaved with cyanogen bromide. Two major fragments were produced. Antisera were produced in rabbits to the pilin protein fragments and to whole uncleaved pili from these strains. Immunoblots of whole and cyanogen bromide-cleaved pilin were reacted with the homologous and heterologous antisera to whole pili and cleaved pilin. Antisera to whole pili reacted strongly with homologous pilin. Weaker and inconsistent reactions were detected with heterologous pilin. Antisera produced to cyanogen bromide-cleaved pilin proteins reacted strongly with homologous and heterologous pilin fragments and uncleaved pilin proteins. These findings demonstrate the presence of conserved **antigenic determinants** on pili from heterologous strains that are non-immunogenic in the intact pilus but are immunogenic after **treatment** with cyanogen bromide. Cyanogen bromide-**treated** pilus preparation might have potential as a **vaccine** because **antibodies** are induced against heterologous strains of M. bovis, whether these cross-reactive **antibodies** are protective remains to be determined.

L36 ANSWER 12 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
 ACCESSION NUMBER: 2000-136677 [12] WPIDS
 CROSS REFERENCE: 1999-008707 [01]
 DOC. NO. CPI: C2000-041834
 TITLE: Genetically engineered immunogenic composition containing a hydrolytically active enzyme and an immunologically active gene product useful as a **vaccine**.
 DERWENT CLASS: B04 C06 D16
 INVENTOR(S): BEJ, A K; EBERL, L; GIVSKOV, M; KRISTENSEN, C S; MOLIN, S
 PATENT ASSIGNEE(S): (GXBI-N) GX BIOSYSTEMS AS
 COUNTRY COUNT: 1
 PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|------------|------|----------|-----------|----|----|
| US 6017730 | A | 20000125 | (200012)* | | 82 |

APPLICATION DETAILS:

| PATENT NO | KIND | | APPLICATION | DATE |
|------------|------|---------|----------------|----------|
| US 6017730 | A | Cont of | US 1992-863261 | 19920406 |
| | | CIP of | US 1993-133665 | 19931013 |
| | | Cont of | US 1995-544822 | 19951018 |
| | | | US 1998-70964 | 19980504 |

FILING DETAILS:

| PATENT NO | KIND | | PATENT NO |
|------------|------|---------|------------|
| US 6017730 | A | Cont of | US 5834233 |

PRIORITY APPLN. INFO: US 1995-544822 19951018; US 1992-863261
 19920406; US 1993-133665 19931013; US
 1998-70964 19980504

AN 2000-136677 [12] WPIDS

CR 1999-008707 [01]

AB US 6017730 A UPAB: 20000308

NOVELTY - An immunogenic composition containing a gene coding a hydrolytically active enzyme which limits the function of the cells in the

composition and an immunologically active gene product, is new.

DETAILED DESCRIPTION - An immunogenic composition (I) comprises live nonpathogenic or attenuated pathogenic cells containing a gene whose expression results in the formation of an enzyme which is present and hydrolytically active in the cytoplasm of the cells. The cells also contain a regulatory nucleotide sequence which regulates expression of the gene so that formation of the enzyme in the cells is at a rate which results in the hydrolysis of hydrolyzable cytoplasmic substances necessary for non-limited function of the cells to an extent where the function of the cells is being limited. The cells contain a further DNA not naturally related to the gene coding for the hydrolytically active enzyme or to the regulatory nucleotide sequence, this sequence codes for an immunogenic gene product which comprises at least one foreign pathogen-associated epitope. The cells are function-limited to an extent which, when the composition is administered to a human or to a nonhuman animal, allows the cells to express the immunogenic gene product for a period of time and in an amount sufficient to obtain an immune response in the human or non human animal but which does not allow the cells to persist in the human or non human animal.

ACTIVITY - No specific activity given.

MECHANISM OF ACTION - **Vaccine.**

USE - (I) is used to immunize a human or nonhuman animal subject against a pathogen (claimed). When the composition is administered to a subject the cells express the immunologically active gene product for a regulated period of time and at an amount which allows an effective immune response but does not allow the cells to persist in the human or animal.

ADVANTAGE - The immunogenic composition contains genetically modified microorganisms which are biologically contained so there is a limit to their survival. This reduces the risks of undesirable and/or uncontrollable ecological consequences which may result from the use of genetically modified microorganisms
Dwg.0/43

L36 ANSWER 13 OF 67 MEDLINE on STN DUPLICATE 5
 ACCESSION NUMBER: 2000422628 MEDLINE
 DOCUMENT NUMBER: 20381367 PubMed ID: 10908657
 TITLE: Snapshots of usher-mediated protein secretion and ordered pilus assembly.
 AUTHOR: Saulino E T; Bullitt E; Hultgren S J
 CORPORATE SOURCE: Department of Molecular Microbiology and Microbial Pathogenesis, Washington University School of Medicine, St. Louis, MO 63110-1010, USA.
 SOURCE: PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, (2000 Aug 1) 97 (16) 9240-5. Journal code: 7505876. ISSN: 0027-8424.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 200009
 ENTRY DATE: Entered STN: 20000915
 Last Updated on STN: 20000915
 Entered Medline: 20000905
 AB Type 1 pilus biogenesis was used as a paradigm to investigate ordered macromolecular assembly at the outer cell membrane. The ability of Gram-negative bacteria to secrete proteins across their outer membrane and to assemble adhesive macromolecular structures on their surface is a defining event in pathogenesis. We elucidated genetic, biochemical, and biophysical requirements for assembly of functional type 1 pili. We discovered that the minor pilus protein FimG

plays a critical role in nucleating the formation of the adhesive tip fibrillum. Genetic methods were used to trap pilus subunits during their translocation through the outer membrane usher protein, providing data on the structural interactions that occur between subunit components during type 1 pilus formation. Electron microscopic and biochemical analyses of these stepwise assembly intermediates demonstrated that translocation of pilus subunits occurs linearly through the usher's central channel, with formation of the pilus helix occurring extracellularly. Specialized pilin subunits play unique roles both in this multimerization and in the final ultrastructure of the adhesive pilus.

L36 ANSWER 14 OF 67 MEDLINE on STN DUPLICATE 6
 ACCESSION NUMBER: 1998109417 MEDLINE
 DOCUMENT NUMBER: 98109417 PubMed ID: 9449363
 TITLE: Bacterial adhesion pili are heterologous assemblies of similar subunits.
 AUTHOR: Bullitt E; Makowski L
 CORPORATE SOURCE: Department of Biophysics, Boston University School of Medicine, Massachusetts 02118-2526, USA.. bullitt@bu.edu
 SOURCE: BIOPHYSICAL JOURNAL, (1998 Jan) 74 (1) 623-32.
 Journal code: 0370626. ISSN: 0006-3495.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199804
 ENTRY DATE: Entered STN: 19980410
 Last Updated on STN: 19980410
 Entered Medline: 19980402

AB P-pili on uropathogenic bacteria are 68-A-diameter rods typically 1 microm in length. These structures project from the outer membrane of Escherichia coli, and contain on their distal tip a thin fibrillum, 25 A in diameter and 150 A long, displaying an adhesin protein responsible for the binding of the bacterium to the surface of epithelial cells lining the urinary tract. Operationally, it is possible to identify three morphologically distinct states of the 68-A-diameter P-pili rods, based on the degree of curvature each can adopt. These states are designated "straight," "curved," and "highly curved." The rods can also be unwound to form thin "threads" that are very similar to the tip fibrillae. Electron microscope data are used to distinguish among these four morphological states and to define limits on the shapes of the **pilus proteins**. The mechanical properties of the **PapA** polymers are assessed, and implications of rod polymorphism for pilus function are discussed. A wide variety of data are considered in light of the possibility that all pilins are similar in molecular architecture, with specific differences designed to optimize their specialized functions in the pilus assembly.

L36 ANSWER 15 OF 67 MEDLINE on STN DUPLICATE 7
 ACCESSION NUMBER: 1998339965 MEDLINE
 DOCUMENT NUMBER: 98339965 PubMed ID: 9675365
 TITLE: Synthesis of some amino and carboxy analogs of galabiose; evaluation as inhibitors of the **pilus protein** PapGJ96 from Escherichia coli.
 AUTHOR: Hansen H C; Magnusson G
 CORPORATE SOURCE: Center for Chemistry and Chemical Engineering, Lund University, Sweden.
 SOURCE: CARBOHYDRATE RESEARCH, (1998 Feb) 307 (3-4) 233-42.
 Journal code: 0043535. ISSN: 0008-6215.
 PUB. COUNTRY: Netherlands

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199808
 ENTRY DATE: Entered STN: 19980817
 Last Updated on STN: 19980817
 Entered Medline: 19980806

AB The 2'-amino-2'-deoxy, 6-amino-6-deoxy, and 6-carboxy analogs of the reference inhibitors 2-(trimethylsilyl)ethyl (alpha-D-galactopyranosyl)-(1->4)-ss-D-galactopyranoside were synthesized and evaluated as inhibitors of the binding of the Escherichia coli-derived **pilus protein** PapGj96, using an ELISA assay. The inhibitory efficiencies (Krel; relative to the reference inhibitor) were: 157,13, and < 8, respectively. The results support the previously proposed combining site model, where the protein carries a negatively charged amino acid residue near HO-2' and HO-6 of the galabio-side.

L36 ANSWER 16 OF 67 MEDLINE on STN
 ACCESSION NUMBER: 1998193928 MEDLINE
 DOCUMENT NUMBER: 98193928 PubMed ID: 9532736
 TITLE: Characterization of a 20-kDa **pilus protein** expressed by a diarrheogenic strain of non-O1/non-O139 Vibrio cholerae.
 AUTHOR: Sengupta T K; Nandy R K; Mukhopadhyay S; Hall R H; Sathyamoorthy V; Ghose A C
 CORPORATE SOURCE: Department of Microbiology, Bose Institute, Calcutta, India.
 SOURCE: FEMS MICROBIOLOGY LETTERS, (1998 Mar 15) 160 (2) 183-9.
 Journal code: 7705721. ISSN: 0378-1097.
 PUB. COUNTRY: Netherlands
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199805
 ENTRY DATE: Entered STN: 19980514
 Last Updated on STN: 19980514
 Entered Medline: 19980501

AB A diarrheogenic strain of non-O1/non-O139 Vibrio cholerae (10,325) belonging to serogroup O34 was earlier shown to express a new type of pilus composed of a 20-kDa subunit protein. Amino-terminal sequence data (determined up to 20 amino acid residues) of this protein showed it to be different from the subunit proteins of other known types of pili of V. cholerae. On the other hand, it showed complete homology with the corresponding sequence of a 22-kDa outer membrane protein (OmpW) of V. cholerae. Expression of 10,325 pili was favored in AKI rather than in NB medium and at 30 degrees C rather than at 37 degrees C. Further, cultural conditions favoring pilus expression also enhanced autoagglutination and adherence properties of strain 10,325. An antiserum to the 20-kDa protein induced passive protection against challenge with the parent organism 10,325, but not against V. cholerae O1 strains. Such protection was shown to be mediated by inhibition of intestinal colonization in vivo.

L36 ANSWER 17 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
 ACCESSION NUMBER: 1997-197198 [18] WPIDS
 DOC. NO. CPI: C1997-063217
 TITLE: Oral composition containing **antibodies** - to Actinobacillus actinomycetemcomitans **pilus protein**, useful for **preventing** or **treating** periodontal disease.
 DERWENT CLASS: B04 D13 D16 D21

PATENT ASSIGNEE(S): (LIOY) LION CORP
 COUNTRY COUNT: 1
 PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|-------------|------|----------|-----------|----|----|
| JP 09052822 | A | 19970225 | (199718)* | | 9 |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|-------------|------|----------------|----------|
| JP 09052822 | A | JP 1995-225685 | 19950810 |

PRIORITY APPLN. INFO: JP 1995-225685 19950810

AN 1997-197198 [18] WPIDS

AB JP 09052822 A UPAB: 19970502

Oral composition contg. an **antibody** which is prepd. by immunising an animal with a synthetic peptide corresponding to a fragment derived from the pilus of *Actinobacillus actinomycetemcomitans* as antigen, is new.

USE - The oral compositions are used in **prevention** or **treatment** of periodontal diseases caused by *Actinobacillus actinomycetemcomitans*. The **antibody** (as antiserum, milk, egg or as **antibody** purified therefrom) may be formulated into oral compsns. e.g. toothpaste or powder or liq: prepns., mouthwash, mouth tonic, troches, pastes, cream, chewing gum, candy, milk prods. and applied at a dose of 0.0001-50 g/kg/day. The content of the **antibody** in the compsns. may be 0.0002-10 wt.% pref. 0.002-5%.

ADVANTAGE - In a test with a rabbit's antiserum prepd. as above, adhesion of *Actinobacillus actinomycetemcomitans* to the human cheek epithelium was inhibited about 85% at 100-fold dilution.
 Dwg.0/2

L36 ANSWER 18 OF 67 MEDLINE on STN DUPLICATE 8
 ACCESSION NUMBER: 97352697 MEDLINE
 DOCUMENT NUMBER: 97352697 PubMed ID: 9209056
 TITLE: Identification and localization of the Tgl protein, which is required for *Myxococcus xanthus* social motility.
 AUTHOR: Rodriguez-Soto J P; Kaiser D
 CORPORATE SOURCE: Department of Biochemistry, Stanford University School of Medicine, California 94305-5427, USA.
 SOURCE: JOURNAL OF BACTERIOLOGY, (1997 Jul) 179 (13) 4372-81.
 Journal code: 2985120R. ISSN: 0021-9193.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199708
 ENTRY DATE: Entered STN: 19970902
 Last Updated on STN: 19970902
 Entered Medline: 19970819
 AB Tgl protein is required for the production of the type IV pili found at a pole of the *Myxococcus xanthus* cell. These pili are essential for social motility. Evidence is presented that Tgl is a membrane protein, based on experiments with polyclonal **antibody** specific for Tgl that was raised against the fusion proteins beta-galactosidase-Tgl and TrpE-Tgl. Immunoaffinity-purified **antibody** reacted with a protein in *M. xanthus* having an apparent molecular mass of 27.5 kDa as measured by

sodium dodecyl sulfate-polyacrylamide gel electrophoresis, while the sequence of the *tgl* gene translates into a polypeptide of 27 kDa. Although these numbers are close, it is likely that the primary *tgl* translation product is **processed** and modified in *M. xanthus*. The N terminus has a signal peptidase II recognition sequence, cleavage of which is expected to remove 19 amino acid residues. When the *tgl* gene is expressed in *Escherichia coli*, the protein product consistently migrates faster in the gel than mature Tgl expressed in *M. xanthus*, suggesting a second modification by addition which slows migration of the protein from *M. xanthus*. Tgl, as detected by its specific **antibody**, sediments with the membrane fraction of cells. It can be extracted with detergents but not with salt or by the addition of chelators for divalent cations. In an equilibrium gradient, Tgl bands at the buoyant density of membranes and with the NADH-oxidase activity. Intact cells failed to bind anti-Tgl **antibody**, and less than 2% of the total Tgl is released in soluble form from the periplasm. Yet, cells that had been osmotically shocked and **treated** with paraformaldehyde were able to react with the specific **antibody**--a reaction absent from cells with a deletion of the *tgl* transcription unit. Assuming that osmotic shock disrupts the outer membrane, the fractionation and localization data imply that Tgl is attached to the inner or outer membranes, from which it is exposed to the intermembranous space. Tgl is necessary for synthesis of pili in *M. xanthus* and is the only **pilus protein** that can be donated by other cells (stimulation). Tgl contains six tandem copies of the tetratrico peptide repeat structural motif. Its membrane localization, capacity for stimulation, and content of tetratrico structural repeats together suggest that Tgl may be necessary for the assembly of pilin subunits into filaments.

L36 ANSWER 19 OF 67 JAPIO (C) 2003 JPO on STN

ACCESSION NUMBER: 1996-116978 JAPIO
 TITLE: PREPARATION OF **ANTIBODY** FAB LIBRARY
 INVENTOR: IHARA SEIJI; TAKEKOSHI MASATAKA; TANAKA HIDEYUKI
 PATENT ASSIGNEE(S): NISSHINBO IND INC
 PATENT INFORMATION:

| PATENT NO | KIND | DATE | ERA | MAIN IPC |
|-------------|------|----------|--------|------------|
| JP 08116978 | A | 19960514 | Heisei | C12N015-09 |

APPLICATION INFORMATION

STN FORMAT: JP 1994-252457 19941018
 ORIGINAL: JP06252457 Heisei
 PRIORITY APPLN. INFO.: JP 1994-252457 19941018
 SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1996

AN 1996-116978 JAPIO

AB PURPOSE: To obtain the subject vector containing a cistron having a linker containing a site for accepting the gene of H-chain Fd constituting Fab and a cistron having a site for accepting an L-chain gene and useful for the preparation of a library for producing Fab fragment.

CONSTITUTION: This phagimide vector to give an expression library of an **antibody** Fab fragment by transforming *E. coli* is produced by forming the 1st cistron containing a *tac*-SD promoter, a pectate-dissolving leader sequence, a linker part having a site for accepting a gene selected from a gene coding an H-chain Fd and a gene coding an L-chain constituting an **antibody** Fab fragment and a termination site from the 5'-site in the order and the 2nd cistron containing a *tac*-SD promoter, a pectate-dissolving leader sequence, a linker site having a site for accepting the other gene selected from a gene coding an H-chain Fd and a

gene coding an L-chain, a GeneIII gene coding a **pilus protein** and a termination site from the 5'-site in the order.
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L36 ANSWER 20 OF 67 JAPIO (C) 2003 JPO on STN

ACCESSION NUMBER: 1996-048695 JAPIO

TITLE: PEPTIDES CONTAINING SEQUENCE OF PORPHYROMONAS
GINGIVALIS TYPE II PILUS PROTEIN
AND THEIR USES

INVENTOR: YASUDA KENJI; OGAWA TOMOHIKO; YAMADA KEIKO; KITAGUNI
HIDESABURO; HASEGAWA MAMORU; FUKUI MASANORI; MORI
HIDEJI

PATENT ASSIGNEE(S): MEITO SANGYO KK
KYOWA MEDEX CO LTD
KYOWA HAKKO KOGYO CO LTD

PATENT INFORMATION:

| PATENT NO | KIND | DATE | ERA | MAIN IPC |
|-------------|------|----------|--------|------------|
| JP 08048695 | A | 19960220 | Heisei | C07K007-06 |

APPLICATION INFORMATION

STN FORMAT: JP 1994-204422 19940805

ORIGINAL: JP06204422 Heisei

PRIORITY APPLN. INFO.: JP 1994-204422 19940805

SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined
Applications, Vol. 1996

AN 1996-048695 JAPIO

AB PURPOSE: To obtain the subject new peptides for producing a composition for diagnosis of periodontal diseases, **preventive vaccine** and an **antibody** for **preventing** and **treating** periodontal disease and being a subunit protein fragment constituting type II pilus of Porphyromonas gingivalis.
CONSTITUTION: These new peptides are peptides corresponding to a fragment derived from an amino acid sequence of 72KDa subunit protein constituting type II pilus of Porphyromonas gingivalis and comprising a fragment containing continuing 5-10C amino acid residues expressed by formulas I to III, etc., and are useful for producing a composition for diagnosis of periodontal disease, **vaccine** for **preventing** periodontal disease and an **antibody** for **preventing** and **treating** periodontal disease. These peptides are obtained by synthesizing by a liquid phase or solid phase synthetic method of peptides from the amino sequence of 72KDa subunit protein fragment derived from Porphyromonas gingivalis OMZ409 strain.
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L36 ANSWER 21 OF 67 MEDLINE on STN DUPLICATE 9

ACCESSION NUMBER: 97020023 MEDLINE

DOCUMENT NUMBER: 97020023 PubMed ID: 8866477

TITLE: Assembly proteins of CS1 pili of enterotoxigenic
Escherichia coli.

AUTHOR: Sakellaris H; Balding D P; Scott J R

CORPORATE SOURCE: Department of Microbiology and Immunology, Emory University
School of Medicine, Atlanta, Georgia 30322, USA.

CONTRACT NUMBER: AI24870 (NIAID)

SOURCE: MOLECULAR MICROBIOLOGY, (1996 Aug) 21 (3) 529-41.
Journal code: 8712028. ISSN: 0950-382X.

PUB. COUNTRY: ENGLAND: United Kingdom

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199703
 ENTRY DATE: Entered STN: 19970414
 Last Updated on STN: 19990129
 Entered Medline: 19970328

AB Some strains of enterotoxigenic *Escherichia coli* associated with human diarrhoeal disease produce a class of pili represented by those called CS1. For the assembly of the major-pilin subunit, CooA, into pili, each of four linked genes, cooB, A, C, and D, is required. In this study, we have determined the subcellular localization of CooB, C and D, and investigated the molecular interactions of these proteins using specific antisera. CooD appears to be an integral **pilus protein** because it co-purifies with, and is strongly associated with, CS1 pili. In keeping with its role as an assembly protein, the CooD minor pilin (when overexpressed in CS1-piliated strains) was detected in periplasmic intermolecular complexes with the major-pilin subunit CooA. CooB is an assembly protein found exclusively in the periplasm of CS1-piliated strains. CooB also forms periplasmic intermolecular complexes with CooA, but does not constitute part of the final pilus structure. Immunoblot analysis of cell fractions showed that CooC is an outer membrane protein of CS1-piliated *E. coli*. Based on this information, we have proposed a model for CS1-pilus assembly which is very similar to the model for polymerization of the **PapA** pilin of uropathogenic *E. coli*. As the assembly proteins of Pap and CS1 pili are structurally unrelated, this may represent a case of convergent evolution.

L36 ANSWER 22 OF 67 MEDLINE on STN DUPLICATE 10
 ACCESSION NUMBER: 95291261 MEDLINE
 DOCUMENT NUMBER: 95291261 PubMed ID: 7773237
 TITLE: Detection of attachment of enterotoxigenic *Escherichia coli* (ETEC) to human small intestinal cells by enzyme immunoassay.
 AUTHOR: Mynott T L; Luke R K; Chandler D S
 CORPORATE SOURCE: School of Agriculture, La Trobe University, Bundoora, Victoria, Australia.
 SOURCE: FEMS IMMUNOLOGY AND MEDICAL MICROBIOLOGY, (1995 Feb) 10 (3-4) 207-18.
 Journal code: 9315554. ISSN: 0928-8244.
 PUB. COUNTRY: Netherlands
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199507
 ENTRY DATE: Entered STN: 19950720
 Last Updated on STN: 19950720
 Entered Medline: 19950713

AB Simple immunoassays were developed to study the binding between enterocytes of the small intestine and other cell types, and enterotoxigenic *Escherichia coli* (ETEC). CFA/I or CFA/II **pilus protein** or CFA-positive *E. coli* bacteria were immobilised in wells of microtitre plates and incubated with vesicles or crude mucus prepared from human brush border enterocytes. Binding of the cell preparations was detected by adding specific rabbit anti-brush border IgG followed by urease-labelled goat anti-rabbit IgG and urea substrate. The binding of purified CFA/I to human or rabbit small intestine, human oral epithelial cells or Caco-2 cells was detected with specific anti-CFA/I IgG. Both human brush border and mucus-derived preparations were able to attach to ETEC. The binding was CFA-specific and strong enough to withstand several washings. In contrast, CFA/I did not bind to small intestinal cells of non-human small intestinal origin, indicating that there may be important

differences in affinity between receptors present on human small intestinal cells and cells of non-human small intestinal origin. **Antibodies** directed against human small intestinal and non-small intestinal cells did not cross-react with either preparation, indicating that receptors between these different cell sources are different. The EIA proved useful during the identification of a newly-recognised 15 kDa bacterial surface component of ETEC strain H10407P, which may function as a putative attachment factor. The EIAs developed in this study were easy to perform and multiple tests could be performed on small samples, including biopsy samples obtained during endoscopy.

L36 ANSWER 23 OF 67 MEDLINE on STN
ACCESSION NUMBER: 94291946 MEDLINE
DOCUMENT NUMBER: 94291946 PubMed ID: 7912681
TITLE: Epidemic isolates of *Vibrio cholerae* 0139 express antigenically distinct types of colonization pili.
AUTHOR: Sengupta T K; Sengupta D K; Nair G B; Ghose A C
CORPORATE SOURCE: Department of Microbiology, Bose Institute, Calcutta, India.
SOURCE: FEMS MICROBIOLOGY LETTERS, (1994 May 15) 118 (3) 265-71.
Journal code: 7705721. ISSN: 0378-1097.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199408
ENTRY DATE: Entered STN: 19940815
Last Updated on STN: 19950206
Entered Medline: 19940803

AB *Vibrio cholerae* belonging to the recently described serogroup 0139, which are responsible for the current cholera epidemics in India and Bangladesh, were shown to express pilus-like structures partially cross-reacting with the toxin-coregulated pilus of *V. cholerae* strain (0395) belonging to the 01 serogroup and classical biotype. The 0139 pili were composed of 20 kDa subunit proteins which were antigenically related to the 20 kDa **pilus protein** of another diarrhoeagenic non-01 *V. cholerae* strain (serogroup 034) isolated earlier. The pili described in this study were found to be involved in the intestinal colonization process and, therefore, may contribute towards the virulence of the 0139 epidemic isolates.

L36 ANSWER 24 OF 67 MEDLINE on STN DUPLICATE 11
ACCESSION NUMBER: 93163271 MEDLINE
DOCUMENT NUMBER: 93163271 PubMed ID: 8094396
TITLE: Use of monoclonal **antibodies** specific for the a determinant of K88 pili for detection of enterotoxigenic *Escherichia coli* in pigs.
AUTHOR: Westerman R B; Fortner G W; Mills K W; Phillips R M; Greenwood J M
CORPORATE SOURCE: Department of Veterinary Diagnostic Investigation, College of Veterinary Medicine, Kansas State University, Manhattan 66506.
SOURCE: JOURNAL OF CLINICAL MICROBIOLOGY, (1993 Feb) 31 (2) 311-4.
Journal code: 7505564. ISSN: 0095-1137.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199303
ENTRY DATE: Entered STN: 19930402

Last Updated on STN: 19950206

Entered Medline: 19930316

AB Monoclonal **antibodies** directed against the a determinant of K88 pili from porcine enterotoxigenic Escherichia coli which react with all three K88 variants have been produced. These **antibodies** have been used for diagnosis of porcine enterotoxigenic E. coli in a direct enzyme-linked immunosorbent assay with sensitivity to 50 ng of **pilus protein** per ml.

L36 ANSWER 25 OF 67 MEDLINE on STN
ACCESSION NUMBER: 94010252 MEDLINE
DOCUMENT NUMBER: 94010252 PubMed ID: 8104843
TITLE: A 20-kDa **pilus protein** with haemagglutination and intestinal adherence properties expressed by a clinical isolate of non-01 Vibrio cholerae.
AUTHOR: Sengupta T K; Sengupta D K; Ghose A C
CORPORATE SOURCE: Department of Microbiology, Bose Institute, Calcutta, India.
SOURCE: FEMS MICROBIOLOGY LETTERS, (1993 Sep 1) 112 (2) 237-42. Journal code: 7705721. ISSN: 0378-1097.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199311
ENTRY DATE: Entered STN: 19940117
Last Updated on STN: 19950206
Entered Medline: 19931122

AB A clinical isolate of non-01 V. cholerae (10325) was shown to exhibit higher haemagglutination and intestinal adherence activities in vitro when grown in enriched media, such as trypticase soy broth (TSB) as compared to those of cells grown in a synthetic Tris-buffered or 'T'-medium. A comparison of their cell-surface protein and lipopolysaccharide profiles suggested the involvement of a 20-kDa protein in the cellular adherence process. An antiserum, raised specifically against the 20-kDa protein, recognised pilus structures on the surface of TSB grown cells. Further studies showed that the pilus was morphologically as well as antigenically distinct from toxin coregulated pilus (TCP) or other types of pili expressed by both '01 and non-01 organisms. Inhibition data established the involvement of the 20-kDa protein in haemagglutination as well as intestinal tissue adherence activities of the parent organism.

L36 ANSWER 26 OF 67 MEDLINE on STN DUPLICATE 12
ACCESSION NUMBER: 93175121 MEDLINE
DOCUMENT NUMBER: 93175121 PubMed ID: 8094930
TITLE: Pili in microspheres protect rabbits from diarrhoea induced by E. coli strain RDEC-1.
AUTHOR: McQueen C E; Boedeker E C; Reid R; Jarboe D; Wolf M; Le M; Brown W R
CORPORATE SOURCE: Department of Gastroenterology, Walter Reed Army Institute of Research, Washington, DC 20307.
SOURCE: VACCINE, (1993) 11 (2) 201-6. Journal code: 8406899. ISSN: 0264-410X.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199303
ENTRY DATE: Entered STN: 19930402
Last Updated on STN: 19970203

Entered Medline: 19930323

AB We tested whether **pilus proteins** of rabbit diarrhoeagenic *Escherichia coli* (RDEC-1), incorporated into biodegradable microspheres, could function as safe and effective oral immunogens in the rabbit diarrhoea model. The RDEC-1 adhesin, AF/R1, incorporated into poly(D,L-lactide-co-glycolide) microspheres, was administered intraduodenally. **Vaccinated and unvaccinated** rabbits were challenged with RDEC-1 and killed 1 week later. **Vaccination** with AF/R1 in microspheres did not cause diarrhoea or weight loss. After challenge, rabbits given AF/R1 in microspheres, in contrast to **unvaccinated** animals, remained in good health. RDEC-1 attachment to caecal epithelium of **vaccinated** rabbits was reduced ($p = 0.02$), whereas numbers of RDEC-1 in intestinal fluids were little affected. Also, in **vaccinated** animals, biliary anti-AF/R1 IgA levels were increased, and AF/R1-induced blast-cell transformation was vigorous in spleen cell cultures. We conclude that **vaccination** with AF/R1 in microspheres was safe and protected rabbits against RDEC-1 disease, probably by interfering with adherence of the bacteria to the intestinal mucosa. The interference might have been due to the presence of specific **antibodies** secreted in bile.

L36 ANSWER 27 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 1993:313017 BIOSIS

DOCUMENT NUMBER: PREV199345019542

TITLE: Intraduodenal immunization with microencapsulated CFA/II induces a delayed, anti-CFA/II, IgG **antibody**-secreting spleen cell response.

AUTHOR(S): Borowski, R. (1); Sau, K.; Reid, R. H.; McQueen, C. E.; Boedeker, E. C.; Nellore, R.; Dalal, P.; Bhagat, H. R.

CORPORATE SOURCE: (1) Walter Reed Army Inst. Res., Washington, DC 20307 USA

SOURCE: Journal of Immunology, (1993) Vol. 150, No. 8 PART 2, pp. 36A.

Meeting Info.: Joint Meeting of the American Association of Immunologists and the Clinical Immunology Society Denver, Colorado, USA May 21-25, 1993

ISSN: 0022-1767.

DOCUMENT TYPE: Conference

LANGUAGE: English

L36 ANSWER 28 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN

ACCESSION NUMBER: 1992-398530 [48] WPIDS

CROSS REFERENCE: 1991-295351 [40]; 1995-199683 [26]; 1996-019737 [02]; 1998-031704 [03]; 1998-129287 [12]; 1998-347245 [30]

DOC. NO. CPI: C1992-176755

TITLE: Protection against entero-pathogenic organisms - comprises oral admin. of compsn. consisting of synthetic peptide contg. CFA-I **pilus protein** T-cell epitope(s) and/or B-cell epitope(s) encapsulated in biodegradable polymeric matrix.

DERWENT CLASS: B04 C06 D16

INVENTOR(S): BOEDEKER, E C; CASSELS, F J; JARBOE, D; REID, R H; SETTERSTROM, J A

PATENT ASSIGNEE(S): (USSA) US SEC OF ARMY

COUNTRY COUNT: 18

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|--|------|----------|-----------|----|-----|
| WO 9219263 | A1 | 19921112 | (199248)* | EN | 121 |
| RW: AT BE CH DE DK ES FR GB GR IT LU NL SE | | | | | |

W: AU CA FI JP NL NO
 AU 9183036 A 19921221 (199311)

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|------------|------|----------------|----------|
| WO 9219263 | A1 | WO 1991-US3328 | 19910513 |
| AU 9183036 | A | AU 1991-83036 | 19910513 |
| | | WO 1991-US3328 | 19910513 |

FILING DETAILS:

| PATENT NO | KIND | PATENT NO |
|------------|------------|------------|
| AU 9183036 | A Based on | WO 9219263 |

PRIORITY APPLN. INFO: US 1991-690485 19910424

AN 1992-398530 [48] WPIDS

CR 1991-295351 [40]; 1995-199683 [26]; 1996-019737 [02]; 1998-031704 [03];
 1998-129287 [12]; 1998-347245 [30]

AB WO 9219263 A UPAB: 19980730

A novel method for the protection against infection of a human or non-human mammal by enteropathogenic organisms comprises administering orally to the mammal an immunogenic amt. of a pharmaceutical compsn. consisting essentially of an antigenic synthetic peptide contg. CFA/I pilus protein T-cell epitopes; B-cell epitopes or mixts. of the two, encapsulated within a biodegradable polymeric matrix consisting of poly(DL-lactide-co- glycolide) having a relative ratio between the amt. of lactide and glycolide components within the range of 48:52 to 58:42.

Also claimed is a **vaccine** for the immunisation of a human or non-human mammal against infection by enteropathogenic organisms consisting essentially of an antigenic synthetic peptide in the amt. of 0.1 to 1% encapsulated within a biodegradable-biocompatible polymeric matrix. More specifically the antigenic synthetic peptide is selected from those given in the specification.

USE/ADVANTAGE - The method provides extremely effective protection against bacterial or viral infections in the tissue of a mammal. The method protects against bacteria including Salmonella typhi, Shigella sonnei, S. flexner, S. dysenteriae, S. boydii, E. coli, Vibrio cholera, yersinia, staphylococcus, clostridium and campylobacter. Viruses protected against include hepatitis A, rotaviruses, polio virus, HIV, Herpes, Simplex virus types 1 and 2, Varicella-zoster virus, Epstein-Barr virus and cytomegalo viruses. The microspheres do not have to be made up just prior to use as liposomes do and only a small amt. of antigen is required when dispersed within microspheres compared to larger amts. when antigen is used alone for intestinal immunisation. The antigen may be used orally whilst alone it may not be effective, even in large amts.. Free peptides may be used which alone are ineffective for intestinal infection. Intestinal T-cell responses to the antigens dispersed within microspheres indicate that long-lived intestinal immunity will be established
 Dwg.0/78

L36 ANSWER 29 OF 67

MEDLINE on STN

DUPLICATE 13

ACCESSION NUMBER: 93099848 MEDLINE

DOCUMENT NUMBER: 93099848 PubMed ID: 1361168

TITLE: Interactive surface in the PapD chaperone cleft is conserved in pilus chaperone superfamily and essential in subunit recognition and assembly.

AUTHOR: Slonim L N; Pinkner J S; Branden C I; Hultgren S J
 CORPORATE SOURCE: Department of Molecular Microbiology, Washington University
 School of Medicine, St Louis, MO 63110.
 CONTRACT NUMBER: 1R01AI29549 (NIAID)
 2-S07-RR05389 (NCRR)
 SOURCE: EMBO JOURNAL, (1992 Dec) 11 (13) 4747-56.
 Journal code: 8208664. ISSN: 0261-4189.
 PUB. COUNTRY: ENGLAND: United Kingdom
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199301
 ENTRY DATE: Entered STN: 19930205
 Last Updated on STN: 19950206
 Entered Medline: 19930121

AB The assembly of adhesive pili in Gram-negative bacteria is modulated by specialized periplasmic chaperone systems. PapD is the prototype member of the superfamily of periplasmic pilus chaperones. Previously, the alignment of chaperone sequences superimposed on the three dimensional structure of PapD revealed the presence of invariant, conserved and variable amino acids. Representative residues that protruded into the PapD cleft were targeted for site directed mutagenesis to investigate the **pilus protein** binding site of the chaperone. The ability of PapD to bind to fiber-forming pilus subunit proteins to **prevent** their participation in misassembly interactions depended on the invariant, solvent-exposed arginine-8 (R8) cleft residue. This residue was also essential for the interaction between PapD and a minor pilus adaptor protein. A mutation in the conserved methionine-172 (M172) cleft residue abolished PapD function when this mutant protein was expressed below a critical threshold level. In contrast, radical changes in the variable residue glutamic acid-167 (E167) had little or no effect on PapD function. These studies provide the first molecular details of how a periplasmic pilus chaperone binds to nascently translocated pilus subunits to guide their assembly into adhesive pili.

L36 ANSWER 30 OF 67 MEDLINE on STN DUPLICATE 14
 ACCESSION NUMBER: 92210497 MEDLINE
 DOCUMENT NUMBER: 92210497 PubMed ID: 1556073
 TITLE: Production of a conserved adhesin by the human
 gastroduodenal pathogen *Helicobacter pylori*.
 AUTHOR: Doig P; Austin J W; Kostrzynska M; Trust T J
 CORPORATE SOURCE: Department of Biochemistry and Microbiology, University of
 Victoria, British Columbia, Canada.
 SOURCE: JOURNAL OF BACTERIOLOGY, (1992 Apr) 174 (8) 2539-47.
 Journal code: 2985120R. ISSN: 0021-9193.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199205
 ENTRY DATE: Entered STN: 19920515
 Last Updated on STN: 19920515
 Entered Medline: 19920506

AB An adhesin protein with an approximate subunit molecular weight of 19,600 has been purified from the gastric pathogen *Helicobacter pylori*. The protein was loosely associated with the cell surface and was removed by gentle stirring or shearing. Released aggregates of the 19.6-kDa protein were removed from suspension by ultracentrifugation and separated from contaminating membranes by washing in 1.0% sodium dodecyl sulfate (SDS). The SDS-insoluble protein was purified further by Mono Q anion-exchange

column chromatography. Electron microscopy of the purified adhesin demonstrated that it formed amorphous aggregates similar to the material attached to the bacterial cells and that the aggregates were morphologically distinct from typical fimbriae. Western blot (immunoblot) analysis with antiserum raised against the purified protein from one strain reacted with a protein with a similar subunit molecular weight present in all nine strains of *H. pylori* examined, but the protein was not present in other *Helicobacter* species examined. The N-terminal sequences of the 19.6-kDa protein purified from three different strains of *H. pylori* were identical for the first 28 amino acids, with the 10 amino-terminal residues showing limited sequence homology with the TcpA pilus protein of *Vibrio cholerae*. The *H. pylori* 19.6-kDa protein associated both with human and rabbit erythrocytes and with human buccal epithelial cells. Polystyrene microspheres coated with the protein agglutinated human, horse, and rabbit erythrocytes, suggesting that this protein species could mediate adhesion between *H. pylori* and eucaryotic cells. This ability to act as an adhesin may make this protein an important virulence factor for *H. pylori* and hence a potential target for a vaccine and therapy.

L36 ANSWER 31 OF 67 MEDLINE on STN DUPLICATE 15
 ACCESSION NUMBER: 92192827 MEDLINE
 DOCUMENT NUMBER: 92192827 PubMed ID: 1548076
 TITLE: Human tracheobronchial mucin: purification and binding to *Pseudomonas aeruginosa*.
 AUTHOR: Reddy M S
 CORPORATE SOURCE: Department of Oral Biology, School of Dental Medicine, State University of New York, Buffalo 14214.
 CONTRACT NUMBER: AI27401 (NIAID)
 SOURCE: INFECTION AND IMMUNITY, (1992 Apr) 60 (4) 1530-5.
 Journal code: 0246127. ISSN: 0019-9567.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199204
 ENTRY DATE: Entered STN: 19920509
 Last Updated on STN: 19920509
 Entered Medline: 19920423

AB Colonization of the respiratory tract with *Pseudomonas aeruginosa* is a serious problem in cystic fibrosis and seriously ill hospitalized patients. Human tracheobronchial mucin (HTBM), the major glycoprotein of human tracheobronchial secretions, is known to interact with this pathogen, which may then be cleared by mucociliary action. However, the mechanism of interaction is not known. To understand this process, pure HTBM was isolated from tracheobronchial secretions of a laryngectomee. Following initial fractionation on Sepharose CL-2B, the HTBM-containing fraction was subjected to reductive methylation and then gel filtration. Pure HTBM was employed in an overlay binding assay to identify the bacterial adhesin(s) and mucin receptors that participate in mucin-*P. aeruginosa* interactions. An approximately 16-kDa nonpilus protein component(s) of *P. aeruginosa* was found to be the adhesin(s) for HTBM. The mucin receptor for the 16-kDa component(s) was found in the peptide moiety. This study confirms that *P. aeruginosa* utilizes the nonpilus adhesin(s) to bind to HTBM. Identification of the specificity of the HTBM-*P. aeruginosa* interactions can lead to a better understanding of the predominance of *P. aeruginosa* colonization in individuals with cystic fibrosis.

L36 ANSWER 32 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 1991:381461 BIOSIS
DOCUMENT NUMBER: BR41:53851
TITLE: AF-R1 PILUS PROTEIN REMAINS IMMUNOGENIC
TO RABBIT PEYER'S PATCH CELLS IMMUNIZED IN-VITRO AFTER
MICROENCAPSULATION.
AUTHOR(S): DAVIS D; REID R H; SAU K
CORPORATE SOURCE: WALTER REED ARMY INST. RES., WASHINGTON, D.C. 20307.
SOURCE: 91ST GENERAL MEETING OF THE AMERICAN SOCIETY FOR
MICROBIOLOGY 1991, DALLAS, TEXAS, USA, MAY 5-9, 1991. ABSTR
GEN MEET AM SOC MICROBIOL, (1991) 91 (0), 132.
CODEN: AGMME8.
DOCUMENT TYPE: Conference
FILE SEGMENT: BR; OLD
LANGUAGE: English

L36 ANSWER 33 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1990:324961 BIOSIS
DOCUMENT NUMBER: BR39:32297
TITLE: ENHANCED LYMPHOCYTE ANTIBODY RESPONSE BY MUCOSAL
IMMUNIZATION OF RABBITS WITH MICROENCAPSULATED AF-RI
PILUS PROTEIN.
AUTHOR(S): DAVIS D; REID R; SAU K; LITTLE C; MCQUEEN C; BOEDEKER E;
HUDSON M; TICE T; GILLEY R
CORPORATE SOURCE: WALTER REED ARMY INST. RES., WASHINGTON, D.C. 20307, USA.
SOURCE: JOINT MEETING OF THE AMERICAN SOCIETY FOR BIOCHEMISTRY AND
MOLECULAR BIOLOGY AND THE AMERICAN ASSOCIATION OF
IMMUNOLOGISTS, NEW ORLEANS, LOUISIANA, USA, JUNE 4-7, 1990.
FASEB (FED AM SOC EXP BIOL) J, (1990) 4 (7), A1865.
CODEN: FAJOEC. ISSN: 0892-6638.
DOCUMENT TYPE: Conference
FILE SEGMENT: BR; OLD
LANGUAGE: English

L36 ANSWER 34 OF 67 MEDLINE on STN DUPLICATE 16
ACCESSION NUMBER: 90354781 MEDLINE
DOCUMENT NUMBER: 90354781 PubMed ID: 1974915
TITLE: The pili of Aeromonas hydrophila: identification of an
environmentally regulated "mini pilin".
AUTHOR: Ho A S; Mietzner T A; Smith A J; Schoolnik G K
CORPORATE SOURCE: Division of Geographic Medicine, Howard Hughes Medical
Institute, Stanford, California.
SOURCE: JOURNAL OF EXPERIMENTAL MEDICINE, (1990 Sep 1) 172 (3)
795-806.
Journal code: 2985109R. ISSN: 0022-1007.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199009
ENTRY DATE: Entered STN: 19901026
Last Updated on STN: 19990129
Entered Medline: 19900927

AB Ultrastructural studies of Aeromonas hydrophila strain AH26 revealed two
distinctive pilus types: "straight" pili appear as brittle, rod-like
filaments, whereas "flexible" pili are supple and curvilinear. Straight
pili are produced constitutively under all tested conditions of growth.
In contrast, the expression of flexible pili is regulated by physical and
chemical variables, being produced at 22 vs. 37 degrees C, in a liquid vs.
a solid medium, and when the availability of free-iron is reduced by the
presence of deferoxamine mesylate. Both pilus proteins

were purified and biochemically and functionally characterized. The major repeating subunit of the straight pilus is a 17,000-mol wt polypeptide with amino acid sequence homology with Escherichia coli type 1 and Pap pili. The flexible pilus filament is a homopolymer composed of a novel 46 amino acid polypeptide. Resistance of the flexible pilus filament to disaggregation using various chemical treatments was demonstrated; its stability as a polymer and its apparent mechanical strength seem to be conferred by a 20 amino acid hydrophobic, COOH-terminal domain. Purified straight pili lack hemagglutinating function. In contrast, purified flexible pili cause the agglutinin of human, guinea pig, ovine, bovine, and avian erythrocytes, although this property could only be demonstrated in the presence of divalent cations and was most evident at 4 vs. 22 degrees C. Taken together, these results suggest that the pathogenic and ecological roles of the flexible pilus are related to this species' existence as a free-living organism in aquatic environments and its ability to cause infections, both in cold-blooded vertebrates and the human intestine.

L36 ANSWER 35 OF 67 MEDLINE on STN DUPLICATE 17
 ACCESSION NUMBER: 91188716 MEDLINE
 DOCUMENT NUMBER: 91188716 PubMed ID: 1982033
 TITLE: Iscom (immunostimulating complex) **vaccines** containing mono- or polyvalent pili of enterotoxigenic E. coli; immune response of rabbit and swine.
 AUTHOR: Nagy B; Hoglund S; Morein B
 CORPORATE SOURCE: Central Veterinary Institute, Budapest, Hungary.
 SOURCE: ZENTRALBLATT FUR VETERINARMEDIZIN. REIHE B, (1990 Dec) 37 (10) 728-38.
 Journal code: 0331325. ISSN: 0514-7166.
 PUB. COUNTRY: GERMANY: Germany, Federal Republic of
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199105
 ENTRY DATE: Entered STN: 19910526
 Last Updated on STN: 20030218
 Entered Medline: 19910506

AB Iscom (immunostimulating complex) **vaccines** were prepared to contain K88ab, K88ac, K99 and 987P pili (fimbriae) of enterotoxigenic E. coli bacteria as monovalent or quadrivalent preparations. The iscoms injected into rabbits and into pigs elicited similar or higher immune response in both animal species than the oil adjuvanted **vaccine** containing about 5 times more of the same **pilus protein**. It is concluded that inclusion of pili into iscoms results in immunogenic preparations likely worth pursuing for **vaccine** production against enterotoxigenic colibacillosis of newborn pigs. The iscoms did not induce local reaction at the injection sites in contrast to the oil adjuvanted **vaccines**.

L36 ANSWER 36 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
 ACCESSION NUMBER: 1989-122212 [16] WPIDS
 DOC. NO. CPI: C1989-054262
 TITLE: **Vaccine** against infectious bovine keratoconjunctivitis - contg. cyanogen bromide cleavage fragments of pili of a pathogenic strain of Moraxella bovis.
 DERWENT CLASS: B04 C03 D16
 PATENT ASSIGNEE(S): (UYTE-N) UNIV TENNESSEE RES CORP
 COUNTRY COUNT: 1
 PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|------------|------|----------|-----------|----|----|
| US 4818528 | A | 19890404 | (198916)* | | 5 |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|------------|------|---------------|----------|
| US 4818528 | A | US 1987-11991 | 19870206 |

PRIORITY APPLN. INFO: US 1987-11991 19870206

AN 1989-122212 [16] WPIDS

AB US 4818528 A UPAB: 19930923

A **vaccine** against infectious bovine keratoconjunctivitis (IBK) is claimed comprising a **carrier** and protein fragments derived from individual pili of a pathogenic strain of *Moraxella bovis* by cleaving such pili with cyanogen bromide. Each protein fragment includes at least one antigenic site exposed in the course of the cleavage and which is common to the pili proteins of multiple pathogenic strains of *Moraxella bovis*. The protein fragments are capable of inducing the prodn. of **antibodies** reactive to the antigenic site, the **antibodies** being nonspecific to the *Moraxella bovis* strain from which the protein fragments originated.

The *M. bovis* strains may be e.g. NPTn, EPP-63, IBH-64 or FLA-64.

Alternatively a DNA sequence encoding the common antigenic sites can be cloned and the DNA expressed in a suitable host to produce the protein fragments.

USE/ADVANTAGE - The cleavage of pilin proteins with CNBr exposes immunogenic determinants which are immunorecessive on the uncleaved **pilus protein** but are common to all strains of *M. bovis*.

Cattle are inoculated with the **vaccines** to develop immunity against infection by homologous and heterologous strains of *M. bovis*.
0/0

L36 ANSWER 37 OF 67 MEDLINE on STN

ACCESSION NUMBER: 90021098 MEDLINE

DOCUMENT NUMBER: 90021098 PubMed ID: 2477941

TITLE: Generation, maintenance and reactivity of ovine T-lymphocyte clones derived from sheep immunized with pili from *Bacteroides nodosus*.

AUTHOR: Emery D L; Rothel J S; Kirkpatrick A; Maclaren J A

CORPORATE SOURCE: CSIRO, Division of Animal Health, McMaster Laboratory, Australia.

SOURCE: VETERINARY IMMUNOLOGY AND IMMUNOPATHOLOGY, (1989 Jul) 21 (3-4) 339-49.

Journal code: 8002006. ISSN: 0165-2427.

PUB. COUNTRY: Netherlands

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 198911

ENTRY DATE: Entered STN: 19900328

Last Updated on STN: 19960129

Entered Medline: 19891109

AB Peripheral blood leucocytes (PBL) from sheep immunized with **pilus protein** purified from *Bacteroides nodosus* serogroup A were cultivated in vitro and cloned in the presence of the specific antigen and autologous antigen-presenting cells (APC). The efficiency of cloning was

enhanced by high proliferative responses to pili during the initial week of cultivation, and the provision of recombinant human interleukin-2 (rec-IL-2). After three passages at weekly intervals, bulk cultures of PBL and cloned T-lymphocytes were greater than 99% CD4+, CD8-, sIg-, i.e. the characteristic phenotype of helper T-lymphocytes. Cloned T-lymphocytes were devoid of allo-reactivity, and were restricted by class II antigens of the major histocompatibility complex (MHC). Both bulk PBL and cloned T-lymphocytes exhibited similar patterns of reactivity against pili from different serogroups of *B. nodosus* and the T-lymphocytes reacted to three of six peptides synthesized from the amino-acid sequence of pilus from serogroup A. Although clones of T-lymphocytes could retain antigen specificity for up to 2 months of cultivation, several attempts to recover clones with specific reactivity after storage in liquid nitrogen were unsuccessful.

L36 ANSWER 38 OF 67 MEDLINE on STN DUPLICATE 18
 ACCESSION NUMBER: 89211887 MEDLINE
 DOCUMENT NUMBER: 89211887 PubMed ID: 2468557
 TITLE: Regulatory genes in the thermoregulation of *Escherichia coli* pili gene transcription.
 AUTHOR: Goransson M; Forsman K; Uhlin B E
 CORPORATE SOURCE: Department of Microbiology, University of Umea, Sweden.
 SOURCE: GENES AND DEVELOPMENT, (1989 Jan) 3 (1) 123-30.
 Journal code: 8711660. ISSN: 0890-9369.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 198906
 ENTRY DATE: Entered STN: 19900306
 Last Updated on STN: 19960129
 Entered Medline: 19890602

AB Expression of several different pilus adhesins by *Escherichia coli* is subject to thermoregulation. The surface-located fimbrial structures are present during growth at 37 degrees C but are not produced by cells grown at lower temperatures, such as 25 degrees C. As a step toward understanding the molecular mechanism, we have studied the role of different cistrons of a cloned pilus adhesin gene cluster (pap) from a uropathogenic *E. coli* isolate. By promoter cloning, mRNA analysis, and expression of subcloned genes in trans, we have identified the papI gene as the mediator of thermoregulation at the level of pilus adhesin gene transcription. Expression of the major pilus subunit gene (**papA**) and several other **pilus protein** cistrons appeared to be dependent on stimulation by the papB and papI gene products. Constructs carrying different pap DNA regions indicated that none of the known Pap proteins acts directly as thermosensor. The chromosomal rpoH gene and RpoH sigma factor did not appear to be required for pap transcription, and the thermoregulation of pilus gene transcription must be different from that of the heat shock regulon. By overexpressing the papI gene product from an expression plasmid in trans, we could circumvent the temperature regulation and turn on production of pilus adhesin at low temperature. Our results suggest that the level of mRNA encoding the PapI activator is limiting at low growth temperatures and that thermoregulation is due to a determinant in the papI-papB intercistronic region.

L36 ANSWER 39 OF 67 MEDLINE on STN DUPLICATE 19
 ACCESSION NUMBER: 89253548 MEDLINE
 DOCUMENT NUMBER: 89253548 PubMed ID: 2470668
 TITLE: Monoclonal **antibodies** defining immunogenic regions of pili from *Bacteroides nodosus* strains 198 (A1),

265 (H1) and 336 (F1).
 AUTHOR: Young D; Emery D L; Stewart D J
 CORPORATE SOURCE: CSIRO Division of Animal Health, Parkville, Vic.,
 Australia.
 SOURCE: IMMUNOLOGY AND CELL BIOLOGY, (1989 Feb) 67 (Pt 1) 71-8.
 Journal code: 8706300. ISSN: 0818-9641.
 PUB. COUNTRY: Australia
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 198907
 ENTRY DATE: Entered STN: 19900306
 Last Updated on STN: 19960129
 Entered Medline: 19890710

AB A total of 17 monoclonal **antibodies** (MoAb) were used to analyse the antigenic structure of **pilus protein** from three serogroups of *Bacteroides nodosus*. The four MoAb which agglutinated pili were serogroup (and subgroup) specific, and the agglutinating epitope was present on the pili monomer and dependent on the intra-chain disulfide bond. Non-agglutinating MoAb identified two further non-linear and serogroup-restricted epitopes on strain 198 (A1) pili and two linear epitopes on 336 (F1) and 265 (H1) pili. Three MoAb cross-reacted with pili from six of the eight major serogroups and recognized an epitope in the N-terminal region of the molecule. This panel of MoAb has therefore identified at least four epitopes on **pilus protein** and will facilitate serotypic analyses of the immunogenicity of each epitope in sheep during **vaccination** against footrot.

L36 ANSWER 40 OF 67 MEDLINE on STN DUPLICATE 20
 ACCESSION NUMBER: 88169520 MEDLINE
 DOCUMENT NUMBER: 88169520 PubMed ID: 2895103
 TITLE: Structure and antigenic properties of the tip-located P
pilus proteins of uropathogenic
Escherichia coli.
 AUTHOR: Lund B; Lindberg F; Normark S
 CORPORATE SOURCE: Department of Microbiology, University of Umea, Sweden.
 SOURCE: JOURNAL OF BACTERIOLOGY, (1988 Apr) 170 (4) 1887-94.
 Journal code: 2985120R. ISSN: 0021-9193.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 OTHER SOURCE: GENBANK-M20146; GENBANK-M20181; GENBANK-M20182
 ENTRY MONTH: 198805
 ENTRY DATE: Entered STN: 19900308
 Last Updated on STN: 19950
 Entered Medline: 19880512

AB Pyelonephritogenic *Escherichia coli* freq to Gal alpha (1-4)Gal receptors present these pili is mediated by a pilus-associated **PapG**, and not by the major subunit which the pilus structure. The adhesin and tip and **PapF**, are present in only a few copies. Surface exposure of both **PapF** and required to achieve receptor-specific binding for the genes encoding the tip-associated **PapF**, and **PapG** were determined for two expressing P pili of serotypes F11 and corresponding sequences established for protein. Antisera were used to study the cross-reactivity between the

proteins and the equivalent proteins in F11 and F7(2) pili. We present data showing that, like the major pilus subunit, **PapE** varies its structure and antigenic properties among pili of different serotypes. In contrast, the **PapF** protein was highly conserved, and **PapF**-specific antisera raised against serotype F13 cross-reacted with the **PapF** proteins of both F11 and F7(2) serotypes. The **PapG adhesin** protein from F11 and F7(2) pili differed by only five amino acids out of 316 residues. However, the F13 adhesin showed only 45% amino acid homology with the other two variants.

L36 ANSWER 41 OF 67 MEDLINE on STN DUPLICATE 21
 ACCESSION NUMBER: 88186168 MEDLINE
 DOCUMENT NUMBER: 88186168 PubMed ID: 2895739
 TITLE: Structural and serological relatedness of Haemophilus influenzae type b pili.
 AUTHOR: LiPuma J J; Gilsdorf J R
 CORPORATE SOURCE: Department of Pediatrics and Communicable Diseases, C. S. Mott Children's Hospital, University of Michigan Medical Center, Ann Arbor 48109.
 CONTRACT NUMBER: AI-20934-03 (NIAID)
 SOURCE: INFECTION AND IMMUNITY, (1988 May) 56 (5) 1051-6.
 Journal code: 0246127. ISSN: 0019-9567.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 198805
 ENTRY DATE: Entered STN: 19900308
 Last Updated on STN: 19970203
 Entered Medline: 19880526

AB The structural and serological relatedness of the **pilus proteins** of several isolates of Haemophilus influenzae type b cultured from **patients** with invasive disease and from different anatomic sites within the same **patient** was examined. Epithelial cell-adherent variants of 25 nonadherent parent isolates were obtained by selection for organisms that adhered to human erythrocytes. Outer membrane protein analysis by sodium dodecyl sulfate-polyacrylamide gel electrophoresis revealed the presence of an additional 24- to 24.5-kilodalton protein among all adherent variants but absent from all nonadherent parent isolates. Polyclonal rabbit antiserum against the intact native **pilus protein** of H. influenzae M43 cross-reacted with 20 of 25 adherent H. influenzae in both immunodot and slide-agglutination assays. No differences in reactivity among isolates cultured from more than one anatomic site in the same **patient** were noted. Anti-M43 pilus antiserum had bactericidal activity against both the homologous strain and a heterologous strain that demonstrated serologic identity in the immunodot and slide agglutination assays. The adherence of these strains to human epithelial cells in vitro was inhibited by Fab fragments purified from the antipilus antiserum. These data indicate that a remarkable degree of homogeneity in pilin subunit size exists among the pili of H. influenzae type b and that major **antigenic determinants** are shared among most of these pili. Also, **antibodies** directed against H. influenzae **pilus proteins** may be able to contribute to host defenses through serum bactericidal activity and by blocking the adherence of this bacterium to host epithelial cells.

L36 ANSWER 42 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 ACCESSION NUMBER: 1988:366906 BIOSIS
 DOCUMENT NUMBER: BR35:51519

TITLE: PRIMARY IN-VITRO HUMAN **ANTIBODY** RESPONSE TO AMINO-TERMINAL PEPTIDE OF CFA-I RECOGNIZES THE **PILUS PROTEIN**.
 AUTHOR(S): REID R; ENGLER R; FERREN P; DAVIS D; SAU K; HENSEN S; FISCHER G; BOEDEKER E
 CORPORATE SOURCE: DEP. GASTROENTEROL., WALTER REED ARMY INST. RES., WASHINGTON, D.C., USA.
 SOURCE: 89TH ANNUAL MEETING OF THE AMERICAN GASTROENTEROLOGICAL ASSOCIATION, NEW ORLEANS, LOUISIANA, USA, MAY 14-20, 1988. GASTROENTEROLOGY, (1988) 94 (5 PART 2), A372. CODEN: GASTAB. ISSN: 0016-5085.
 DOCUMENT TYPE: Conference
 FILE SEGMENT: BR; OLD
 LANGUAGE: English

L36 ANSWER 43 OF 67 MEDLINE on STN DUPLICATE 22
 ACCESSION NUMBER: 88156961 MEDLINE
 DOCUMENT NUMBER: 88156961 PubMed ID: 2894612
 TITLE: Identification and characterization of E. coli type-1 pilus tip adhesion protein.
 AUTHOR: Hanson M S; Brinton C C Jr
 CORPORATE SOURCE: Department of Biological Sciences, University of Pittsburgh, Pennsylvania 15260.
 SOURCE: NATURE, (1988 Mar 17) 332 (6161) 265-8. Journal code: 0410462. ISSN: 0028-0836.
 PUB. COUNTRY: ENGLAND: United Kingdom
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 198804
 ENTRY DATE: Entered STN: 19900308
 Last Updated on STN: 19950206
 Entered Medline: 19880420

AB The type-1 pilus of Escherichia coli is the prototype of this class of hair-like, multimeric adhesive organelles. This pilus mediates adherence to mannose-containing receptors on mucosal epithelia and other cells. The type-1 pilus, in one of several serological variants, is expressed by nearly all E. coli strains, and its promotion of colonization by pathogenic bacteria and the protective effects of purified pilus **vaccines** suggest that it is important as a bacterial virulence factor. Both the adhesive function and the serological variation of the type-1 pilus have been attributed to the thousand or so pilin protein monomers making up the pilus rods. This idea has been contradicted by our earlier observations on an E. coli strain expressing adhesion-defective pili. More recent genetic evidence also indicates that auxiliary **pilus proteins** are required for adhesive function. We report here the identification of three previously undetected integral minor proteins on the type-1 pilus, and show that one of them is the receptor-binding adhesin. This protein is antigenically conserved among strains with different pilin serotypes and is located at the pilus tip.

L36 ANSWER 44 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 ACCESSION NUMBER: 1988:342623 BIOSIS
 DOCUMENT NUMBER: BR35:37465
 TITLE: PRIMARY IN-VITRO **ANTIBODY** RESPONSE TO THE AMINO TERMINAL 1-13 PEPTIDE OF CFA-I RECOGNIZES THE **PILUS PROTEIN**.
 AUTHOR(S): DAVIS D; REID R; FERREN P; ANDREWS G; TSENG L; SAU K; BOEDEKER E
 CORPORATE SOURCE: DEP. GASTROENTEROL., WALTER REED ARMY INST. RES.,

SOURCE: WASHINGTON, D.C.
ANNUAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY,
MIAMI BEACH, FLORIDA, USA, MAY 8-13, 1988. ABSTR ANNU MEET
AM SOC MICROBIOL, (1988) 88 (0), 111.
CODEN: ASMACK. ISSN: 0094-8519.

DOCUMENT TYPE: Conference
FILE SEGMENT: BR; OLD
LANGUAGE: English

L36 ANSWER 45 OF 67 MEDLINE on STN DUPLICATE 23
ACCESSION NUMBER: 88162723 MEDLINE
DOCUMENT NUMBER: 88162723 PubMed ID: 2894825
TITLE: Antigenic relatedness and partial amino acid sequences of
pili of Escherichia coli serotypes O1, O2, and O78
pathogenic to poultry.

AUTHOR: Suwanichkul A; Panigrahy B; Wagner R M
CORPORATE SOURCE: Department of Veterinary Microbiology and Parasitology,
College of Veterinary Medicine, Texas A&M University,
College Station 77843.

SOURCE: AVIAN DISEASES, (1987 Oct-Dec) 31 (4) 809-13.
Journal code: 0370617. ISSN: 0005-2086.

PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198804
ENTRY DATE: Entered STN: 19900308
Last Updated on STN: 19950206
Entered Medline: 19880411

AB **Pilus proteins** from Escherichia coli serotypes O1, O2,
and O78 pathogenic to poultry were compared with regard to their antigenic
relatedness and partial amino acid sequences. Agglutination,
immunodiffusion, and immunoblot assays with polyclonal **antibodies**
to these pili showed that these pili not only share some common antigens
but also contain antigens unique to each pilus. The partial
amino-terminal amino acid sequences support our earlier findings that the
pili are different but contain some structural homologies.

L36 ANSWER 46 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1988:191302 BIOSIS
DOCUMENT NUMBER: BR34:94489
TITLE: CONSERVED GONOCOCCAL SURFACE ANTIGENS.
AUTHOR(S): GOTSCHLICH E C
CORPORATE SOURCE: DEP. BACTERIOLOGY AND IMMUNOLOGY, ROCKEFELLER UNIV., 1230
YORK AVENUE, NEW YORK, N.Y. 10021-6399.

SOURCE: SCLAVO INTERNATIONAL CONFERENCE ON BACTERIAL VACCINES AND
LOCAL IMMUNITY, SIENA, ITALY, NOVEMBER 17-19, 1986. ANN
SCLAVO, (1986 (1987)) 0 (1-2), 415-426.
CODEN: ASCLAZ. ISSN: 0003-472X.

FILE SEGMENT: BR; OLD
LANGUAGE: English

L36 ANSWER 47 OF 67 MEDLINE on STN DUPLICATE 24
ACCESSION NUMBER: 87127789 MEDLINE
DOCUMENT NUMBER: 87127789 PubMed ID: 2880577
TITLE: Immunogenicity of an Escherichia coli multivalent pilus
vaccine in chickens.

AUTHOR: Gyimah J E; Panigrahy B; Williams J D
SOURCE: AVIAN DISEASES, (1986 Oct-Dec) 30 (4) 687-9.
Journal code: 0370617. ISSN: 0005-2086.

PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198703
ENTRY DATE: Entered STN: 19900303
Last Updated on STN: 19950206
Entered Medline: 19870320

AB Immunogenicity of an oil-emulsified *Escherichia coli* multivalent pilus **vaccine** was evaluated in 4-week-old chickens. The **vaccine** contained 180 micrograms of **pilus protein** from each of serotypes O1 and O78 and 170 micrograms of **pilus protein** from serotype O2. Chickens were **vaccinated** twice subcutaneously at 4 and 6 weeks old and challenged via the posterior thoracic air sac with *E. coli* serotype O1, O2, or O78 2 weeks after the last **vaccination**. **Unvaccinated** challenged chickens suffered 8% to 26% mortality; no **vaccinated** chickens died. **Vaccinated** chickens had very mild gross lesions in the air sacs, livers, and pericardial sacs and eliminated *E. coli* more efficiently than the **unvaccinated** challenged chickens. The results showed that a multivalent pilus **vaccine** protects chickens against active respiratory infection.

L36 ANSWER 48 OF 67 MEDLINE on STN DUPLICATE 25
ACCESSION NUMBER: 87033391 MEDLINE
DOCUMENT NUMBER: 87033391 PubMed ID: 3533890
TITLE: Inhibition of K88-mediated adhesion of *Escherichia coli* to mammalian receptors by **antibiotics** that affect bacterial protein synthesis.
AUTHOR: Chopra I; Hacker K
SOURCE: JOURNAL OF ANTIMICROBIAL CHEMOTHERAPY, (1986 Oct) 18 (4) 441-51.
Journal code: 7513617. ISSN: 0305-7453.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198612
ENTRY DATE: Entered STN: 19900302
Last Updated on STN: 19900302
Entered Medline: 19861218

AB The ability of ten inhibitors of bacterial protein synthesis to decrease adhesion of *Escherichia coli* bearing K88ac fimbriae was examined. In the presence of the **antibiotics** at concentrations below the MIC values neomycin was the least effective inhibitor of adhesion and minocycline the most active. The effect of minocycline on the synthesis of individual polypeptides encoded by the K88ac determinant was examined in detail. The rate of synthesis of K88ac **pilus protein** in the presence of minocycline 0.75 mg/l (0.5 MIC) was less than that of total cell protein synthesis, suggesting that **pilus protein** becomes progressively 'diluted' in the outer membrane during exposure to this **antibiotic** concentration. Furthermore, the synthesis of two 'helper' polypeptides (molecular weights of 27.5 K and 27 K) which are probably involved in secretion of K88ac **pilus protein** through the cell envelope, was particularly sensitive to minocycline. Our observations suggest that the ability of translational inhibitors to decrease K88ac mediated adhesion probably results from direct inhibition of synthesis of fimbrial protein itself, together with inhibition of 'helper' polypeptide synthesis.

L36 ANSWER 49 OF 67 MEDLINE on STN DUPLICATE 26
 ACCESSION NUMBER: 86272861 MEDLINE
 DOCUMENT NUMBER: 86272861 PubMed ID: 2873911
 TITLE: Fimbriae (pili): molecular basis of Pseudomonas aeruginosa adherence.
 AUTHOR: Paranchych W; Sastry P A; Volpel K; Loh B A; Speert D P
 SOURCE: CLINICAL AND INVESTIGATIVE MEDICINE. MEDECINE CLINIQUE ET EXPERIMENTALE, (1986) 9 (2) 113-8.
 Journal code: 7804071. ISSN: 0147-958X.
 PUB. COUNTRY: Canada
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 198609
 ENTRY DATE: Entered STN: 19900321
 Last Updated on STN: 19950206
 Entered Medline: 19860916

AB Pseudomonas aeruginosa produces polar pili which promote the adherence of the organism to host mucosal surfaces and to blood-borne phagocytic cells such as polymorphonuclear leukocytes. Pseudomonas polar pili are flexible filaments of 52 A diameter and 2500 nm average length. They consist of a single type of protein subunit, pilin, of molecular weight 15,000, which is arranged in a helical mode of 5 subunits per turn and a pitch of 41 A. Purified whole pili, and anti-pilus antiserum both inhibited the interaction of Pseudomonas aeruginosa strains with human buccal epithelial cells and PMNs, suggesting that Pseudomonas adherence to these mammalian cells is pilus mediated. No correlation was found between the level of cell surface fibronectin on human buccal endothelial cells and the adherence of Pseudomonas bacteria. Pseudomonas adherence to buccal endothelial cells obtained from **patients** with cystic fibrosis was somewhat less than that to buccal endothelial cells obtained from healthy individuals. Fibronectin levels on buccal endothelial cells from **patients** with cystic fibrosis were not significantly different than those found on buccal endothelial cells from healthy individuals. Studies with peptide fragments derived from purified pili showed that only one peptide encompassing 23 amino acid residues at the C-terminus of the **pilus protein** was able to inhibit in vitro adherence of P. aeruginosa PAK to human buccal cells. This peptide domain was tentatively assigned the receptor-binding function.

L36 ANSWER 50 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
 ACCESSION NUMBER: 1985-276134 [44] WPIDS
 DOC. NO. NON-CPI: N1985-206069
 DOC. NO. CPI: C1985-119959
 TITLE: New polypeptide smaller than gonococcal pilin protein - includes 5 to 60 aminoacid residues and useful in **vaccines** against gonorrhoea and for producing **antibodies** for assay of the **pilus protein**.
 DERWENT CLASS: B04 D16 P31 S03 S05
 INVENTOR(S): AGBLOM, P O; DEAL, C D; MAGDALENE, Y H
 PATENT ASSIGNEE(S): (SCRI-N) SCRIPPS CLINIC & RE; (SOMY-I) SO M Y H
 COUNTRY COUNT: 19
 PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|-----------------------------------|------|----------|-----------|----|----|
| WO 8504654 | A | 19851024 | (198544)* | EN | 44 |
| RW: AT BE CH DE FR GB IT LU NL SE | | | | | |
| W: AU DK FI JP NO US | | | | | |

ZA 8502629 A 19851015 (198602)
 AU 8541590 A 19851101 (198607)
 EP 177583 A 19860416 (198616) EN
 R: AT BE CH DE FR GB IT LI LU NL SE
 NO 8504903 A 19860303 (198616)
 FI 8504839 A 19851205 (198640)
 JP 61501777 W 19860821 (198640)
 DK 8505652 A 19851205 (198645)
 IL 74829 A 19890228 (198921)

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|-------------|------|----------------|----------|
| WO 8504654 | A | WO 1985-US565 | 19850404 |
| ZA 8502629 | A | ZA 1985-2629 | 19850409 |
| JP 61501777 | W | JP 1985-501646 | 19850404 |

PRIORITY APPLN. INFO: US 1984-597434 19840406

AN 1985-276134 [44] WPIDS

AB WO 8504654 A UPAB: 19930925

Polypeptide (I) smaller than a naturally occurring gonococcal pilin protein and including an amino acid residue sequence of 5-60 amino acid residues and its salts are new. It is capable of immunologically mimicking a conserved **antigenic determinant** site in a variable region of the carboxy terminal half of a gonococcal pilin.

(I) contains up to 60 amino acid residues and includes from left to right in the direction from amino to carboxy terminus, a residue of formula -X1-X2-X3-X4-X5- (II) X1=His, Lys or Arg; X2,X3=Leu, Pro, Trp, Phe, Val, Ala or Ile; X4, X5=Ser, Thr, Cys or Gly.

USE/ADVANTAGE - (I) is useful in a **vaccine** for the prevention of gonorrhoea. It may also be used in the assay of *Neisseria gonorrhoeae* **pilus protein**, when (I) is administered to an animal host to give a receptor, esp. whole **antibody** or an **antibody** combining site, to the (I). Dose is 10 micrograms-100 mg (I) per unit of **vaccine**.

0/0

L36 ANSWER 51 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN

ACCESSION NUMBER: 1985-284718 [46] WPIDS

DOC. NO. CPI: C1985-123209

TITLE: **Vaccines against urinary tract infections** - contg. new *E. coli* gal-gal **pilus protein** or fragments.

DERWENT CLASS: B04 D16

INVENTOR(S): FALKOW, S; LARK, D; OHANLEY, P; SCHOOLNIK, G

PATENT ASSIGNEE(S): (STRD) UNIV LELAND STANFORD JUNIOR

COUNTRY COUNT: 15

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|-------------------------------------|------|--------------------|------|----|----|
| EP 161095 | A | 19851113 (198546)* | EN | 29 | |
| R: AT BE CH DE FR GB IT LI LU NL SE | | | | | |
| AU 8541851 | A | 19851107 (198601) | | | |
| JP 61000022 | A | 19860106 (198607) | | | |
| US 4736017 | A | 19880405 (198816) | | | |
| CA 1261550 | A | 19890926 (198945) | | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|-------------|------|----------------|----------|
| EP 161095 | A | EP 1985-303016 | 19850429 |
| JP 61000022 | A | JP 1985-94545 | 19850430 |
| US 4736017 | A | US 1984-605287 | 19840430 |

PRIORITY APPLN. INFO: US 1984-605287 19840430

AN 1985-284718 [46] WPIDS

AB EP 161095 A UPAB: 19930925

(A) Pilus **vaccines** for **treating urinary tract infections** in humans contain a polypeptide with an amino acid sequence corresp. to at least one **antigenic determinant** of Gal-Gal **pilus protein**.

(B) E.coli HU849 Gal-Gal **pilus protein** (I), comprising a sequence of 163 amino acid, and the 79-110, 15-70, 133-163 and 111-125 fragments of (I) are new.

(I) may be obtained by (a) isolation and purification from E. coli HU849 pili, (b) peptide synthesis, or (c) recombinant DNA technology using the appropriate DNA coding sequence.

ADVANTAGE - (I) and its fragments are highly effective and specific in generating **antibodies** to urinary pathogens and are obtainable in practical amts. and in pure form.

1/2

ABEQ US 4736017 A UPAB: 19930925

Immunogenic peptide comprises at least 15 aminoacids of defined sequence, corresp. to one or more **antigenic determinants** of Escherichia coli Gal-Gal **pilus protein**.

USE - The prods. and their active fragments are dispersed with the usual pharmaceutical **carriers** and opt. additives to provide a **vaccine** which gives protection against urinary infections.

L36 ANSWER 52 OF 67 EMBASE COPYRIGHT 2003 ELSEVIER INC. ALL RIGHTS RESERVED.
on STN

ACCESSION NUMBER: 85195079 EMBASE

DOCUMENT NUMBER: 1985195079

TITLE: **Urinary tract infection**
during pregnancy.

SOURCE: Lancet, (1985) 2/8448 (190-192).

CODEN: LANCAO

COUNTRY: United Kingdom

DOCUMENT TYPE: Journal

FILE SEGMENT: 010 Obstetrics and Gynecology
028 Urology and Nephrology
004 Microbiology

LANGUAGE: English

AB All that can be surmised is that, with the possible exception of the association of premature labour and acute pyelonephritis, the association of UTI and adverse fetal effects is controversial. New approaches are needed so that the mechanisms of the various adverse outcomes can be examined. Further studies must be directed towards defining host-parasite relationships in the urinary tract, including the bactericidal and bacteristatic characteristics of urine, the presence of humoral **antibodies** to urinary pathogens, and the biochemistry of the urinary pathogens. One example of a new approach is the demonstration that various microorganisms, including Escherichia coli, contain phospholipase A2, an enzyme critical in the synthesis of prostaglandins and in the initiation of labour. Another is the discovery that uropathogenic E

coli strains colonise epithelial surfaces by elaborating proteinaceous appendages (pili), and the ability to use purified **pilus protein** to assess the mechanisms of bacterial colonisation and invasion in the renal tract. Unless new approaches are devised the controversies and uncertainties are set to continue.

L36 ANSWER 53 OF 67 MEDLINE on STN
 ACCESSION NUMBER: 85223999 MEDLINE
 DOCUMENT NUMBER: 85223999 PubMed ID: 2408561
 TITLE: **Pseudomonas pili. Studies on antigenic determinants and mammalian cell receptors.**
 AUTHOR: Paranchych W; Sastry P A; Drake D; Pearlstone J R; Smillie L B
 SOURCE: ANTIBIOTICS AND CHEMOTHERAPY, (1985) 36 49-57.
 Journal code: 1305576. ISSN: 0066-4758.
 PUB. COUNTRY: Switzerland
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 198506
 ENTRY DATE: Entered STN: 19900320
 Last Updated on STN: 19990129
 Entered Medline: 19850627

AB **P. aeruginosa** PAK pili are thin 5.2 nm diameter filaments containing a single 15-kd polypeptide subunit which is 144 amino acid residues in length. Studies on pili binding to a variety of synthetic sugars representing many di- tri- and tetra-saccharide structures found in mammalian glycoproteins and glycolipids failed to reveal any significant binding activity. On the other hand, a wide spectrum of binding activities was observed when a variety of structural proteins and enzymes were used as binding substrates. Of 30 proteins tested, phosphorylase b, pyruvate kinase and aldolase showed highest pilus binding activity. It was concluded that the PAK pilus receptor is probably a polypeptide rather than an oligosaccharide. Using arginine-specific cleavage to produce four large peptides, several proteases to produce subfragments of the large peptides, and antipilus rabbit antiserum, PAK pilin was found to contain four **antigenic determinants**. Epitopes near the NH₂- and COOH-termini were only weakly immunogenic, whereas two epitopes near the center of the **pilus protein** titrated about 85% of the antipilus **antibodies**. Cleavage of the **pilus protein** into smaller peptides resulted in marked decreases in the affinity of antigenic peptides for their specific **antibodies**, suggesting that the immunodominant epitopes of PAK pilin are conformation-specific.

L36 ANSWER 54 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 ACCESSION NUMBER: 1985:120582 BIOSIS
 DOCUMENT NUMBER: BR29:10578
 TITLE: **RECOMBINANT VACCINE TO PREVENT URINARY TRACT INFECTIONS.**
 AUTHOR(S): HESTER A S
 CORPORATE SOURCE: 32 N. DEAN ST., ENGLEWOOD, NJ 07631, USA.
 SOURCE: Genet. Technol. News, (1985) 5 (4), 8.
 CODEN: GTNEEA. ISSN: 0272-9032.
 FILE SEGMENT: BR; OLD
 LANGUAGE: English

L36 ANSWER 55 OF 67 MEDLINE on STN DUPLICATE 27
 ACCESSION NUMBER: 85107083 MEDLINE
 DOCUMENT NUMBER: 85107083 PubMed ID: 6151587

TITLE: On the role of pili in transformation of *Neisseria gonorrhoeae*.
AUTHOR: Mathis L S; Scocca J J
CONTRACT NUMBER: 1 POI AI 16969 (NIAID)
SOURCE: JOURNAL OF GENERAL MICROBIOLOGY, (1984 Dec) 130 (Pt 12) 3165-73.
Journal code: 0375371. ISSN: 0022-1287.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198503
ENTRY DATE: Entered STN: 19900320
Last Updated on STN: 19990129
Entered Medline: 19850314

AB Transformation of competent transformable *Neisseria gonorrhoeae* F62 to streptomycin resistance was unaffected by **antibodies** directed against the **pilus protein** (pilin) of this organism. The pilin component of either crude or purified pilus preparations, separated by SDS gel electrophoresis and transferred to nitrocellulose, failed to bind detectable amounts of DNA; DNA binding to other gonococcal polypeptides was observed under these conditions. These results suggest that gonococcal pilin does not play a direct role in gonococcal transformation.

L36 ANSWER 56 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 1985:260634 BIOSIS

DOCUMENT NUMBER: BA79:40630

TITLE: ULTRASTRUCTURAL LOCALIZATION OF SPECIFIC GONOCOCCAL MACROMOLECULES WITH **ANTIBODY**-GOLD SPHERE IMMUNOLOGICAL PROBES.

AUTHOR(S): ROBINSON E N JR; MCGEE Z A; KAPLAN J; HAMMOND M E; LARSON J K; BUCHANAN T M; SCHOOLNIK G K

CORPORATE SOURCE: CENTER INFECTIOUS DISEASES, DIAGNOSTIC MICROBIOLOGY AND IMMUNOLOGY, DEPARTMENT MEDICINE, UNIVERSITY UTAH SCHOOL MEDICINE, SALT LAKE CITY, UTAH 84132.

SOURCE: INFECT IMMUN, (1984) 46 (2), 361-366.

CODEN: INFIBR. ISSN: 0019-9567.

FILE SEGMENT: BA; OLD

LANGUAGE: English

AB In an effort to determine the ultrastructural location of specific macromolecules on the surface of intact microorganisms and in experimentally infected tissues, a new method of rapidly conjugating **antibodies** to Au spheres via a staphylococcal protein A intermediary was developed. This new technique provides the excellent density of marking and versatility of sphere size provided by existing Au methods, but decreases preparation time and the chance of bacterial contamination of **antibody** reagents and increases specificity of marking. Staphylococcal protein A-coated Au spheres were conjugated with **antibodies** from rabbits immunized with purified gonococcal pili. The resulting Au-**antibody** conjugates allowed demonstration of **antibody** binding to pilus structures of the same gonococcal strain whose pili were used to raise the **antibody** and demonstration of the lack of **antibody** recognition of pilus structures on 2 other gonococcal strains. The failure of Au spheres to attach to isogenic nonpiliated clones of the homologous gonococcus indicated the absence of pilus antigens on the surface of these organisms. The use of a double-label, small Au spheres conjugated to anti-pilus **antibody** and larger Au spheres conjugated to anti-protein I **antibody**, allowed the simultaneous localization of 2 gonococcal antigens.

L36 ANSWER 57 OF 67 MEDLINE on STN DUPLICATE 28
ACCESSION NUMBER: 84136236 MEDLINE
DOCUMENT NUMBER: 84136236 PubMed ID: 6142055
TITLE: Enzyme-linked immunosorbent assay with a monoclonal **antibody** for detecting group A meningococcal antigens in cerebrospinal fluid.
AUTHOR: Sugawara R J; Prato C M; Sippel J E
SOURCE: JOURNAL OF CLINICAL MICROBIOLOGY, (1984 Feb) 19 (2) 230-4.
Journal code: 7505564. ISSN: 0095-1137.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198404
ENTRY DATE: Entered STN: 19900319
Last Updated on STN: 19950206
Entered Medline: 19840425

AB Hybridomas were produced from spleen cells of BALB/c mice immunized with a membrane preparation from *Neisseria meningitidis* group A strain 4402 and S194/5.XXOBU.14 myeloma cells. The hybridomas were screened for secretion of **antibodies** suitable for an enzyme-linked immunosorbent assay (ELISA) diagnostic for group A meningococcal meningitis. One hybridoma **antibody**, 3G7, was directed against the **pilus protein**. This **antibody** bound to all six lipopolysaccharide and protein group A meningococcal serotyping strains, as well as to meningococcal strains from serogroups C, W135, and Y, but not to a strain of *Escherichia coli*, *Haemophilus influenzae* type b, or to two or more strains of *Streptococcus pneumoniae*, *Neisseria gonorrhoeae*, and *Salmonella typhi*. The ELISA used on **antibody**, antigen, **antibody**-conjugate sandwich. Rabbit anti-meningococcal serum was the coating **antibody** for the **antibody** sandwich, cerebrospinal fluids contained the bacterial antigens, and 3G7-alkaline phosphatase conjugate was the detecting **antibody**. The monoclonal **antibody** conjugate ELISA system was able to detect group A meningococcal antigens in 21 of 25 cerebrospinal fluid specimens that were positive in an immune rabbit serum conjugate ELISA; cerebrospinal fluid samples from **patients** with *Haemophilus meningitis* served as the controls. Counterimmunoelectrophoresis detected meningococcal antigens in 16 of the same 25 cerebrospinal fluid samples.

L36 ANSWER 58 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1984:107303 BIOSIS
DOCUMENT NUMBER: BR27:23795
TITLE: CHARACTERIZATION OF THE MAJOR **ANTIGENIC DETERMINANT** OF THE EDP-208 **PILUS PROTEIN**.
AUTHOR(S): WOROBEK E; PARKER R; TANEJA A; HODGES R; PARANCHYCH W
CORPORATE SOURCE: UNIV. ALBERTA, EDMONTON, ALBERTA, CAN.
SOURCE: 84TH ANNUAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, ST. LOUIS, MO., USA, MAR. 4-9, 1984. ABSTR ANNU MEET AM SOC MICROBIOL, (1984) 84 (0), ABSTRACT B112. CODEN: ASMACK. ISSN: 0094-8519.
DOCUMENT TYPE: Conference
FILE SEGMENT: BR; OLD
LANGUAGE: English

L36 ANSWER 59 OF 67 MEDLINE on STN DUPLICATE 29
ACCESSION NUMBER: 83108724 MEDLINE
DOCUMENT NUMBER: 83108724 PubMed ID: 6185467

TITLE: Localization of the major **antigenic determinant** of EDP208 pili at the N-terminus of the **pilus protein**.

AUTHOR: Worobec E A; Taneja A K; Hodges R S; Paranchych W

SOURCE: JOURNAL OF BACTERIOLOGY, (1983 Feb) 153 (2) 955-61.
Journal code: 2985120R. ISSN: 0021-9193.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 198303

ENTRY DATE: Entered STN: 19900318
Last Updated on STN: 19990129
Entered Medline: 19830317

AB Trypsin digestion of pilin monomers from EDP208 conjugative pili causes cleavage of Lys12 to yield an N-terminal dodecapeptide, ET1 (Mr approximately equal to 1,500), and the remaining C-terminal fragment, ER (Mr approximately equal to 10,000). Using the amino acid sequence for ET1 provided by Frost et al. (J. Bacteriol. 153:950-954), we synthesized the N-terminal dodecapeptide chemically, conjugated it to bovine serum albumin, and subjected it to immunological studies. Antisera prepared against intact EDP208 pili as well as against the synthetic ET1-BSA conjugate were used in experiments involving an enzyme-linked immunosorbant assay and electrophoretic transfer of proteins from sodium dodecyl sulfate-polyacrylamide gels to nitrocellulose sheets. Both experimental approaches showed strong reactivity between the synthetic dodecapeptide and antiserum raised against whole pili. It was also found that antiserum raised against the synthetic peptide was reactive against intact **pilus protein**, indicating that the N-terminal dodecapeptide is an important **antigenic determinant** of the EDP208 **pilus protein**. Additional studies showed that the C-terminal fragment, ER, may contain one or two additional antigenic sites.

L36 ANSWER 60 OF 67 MEDLINE on STN DUPLICATE 30

ACCESSION NUMBER: 84087544 MEDLINE

DOCUMENT NUMBER: 84087544 PubMed ID: 6140254

TITLE: Quantitative test for *Bacteroides nodosus* **pilus protein** by an agglutination-absorption test.

AUTHOR: Every D

SOURCE: JOURNAL OF APPLIED BACTERIOLOGY, (1983 Oct) 55 (2) 305-13.
Journal code: 7503050. ISSN: 0021-8847.

PUB. COUNTRY: ENGLAND: United Kingdom

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 198402

ENTRY DATE: Entered STN: 19900319
Last Updated on STN: 19950206
Entered Medline: 19840224

AB A pili agglutination-absorption test (PAAT) was developed for the quantitative measurement of **pilus protein** in cultures of *Bacteroides nodosus* and to quantify pili yields during purifications. The test was calibrated by recording the amount of **pilus protein** required to absorb a measurable amount of anti-pili **antibody** from antiserum. The amount of anti-pilus **antibody** in absorbed and unabsorbed serum was specifically measured by a Bact. nodosus K-agglutination test. The PAAT could be calibrated using any combination of crude or pure pili preparations and specific anti-pili serum or non-specific anti-Bact. nodosus serum. This

had advantages over the use of radioimmunoassay (RIA) and enzyme-linked immunosorbent assay (ELISA) techniques for measurement of pili because they require the use of highly purified reagents for calibration. The minimum quantity of **pilus protein** measurable by PAAT was 0.1 microgram per test which was similar in sensitivity to that reported for RIA and ELISA. The reagents used in PAAT were stable for at least six months. The amount of **pilus protein** per bacterium as measured by PAAT was directly proportional to the average number of pili per bacterium as measured by electron microscopy. The test was Bact. nodosus serotype specific.

L36 ANSWER 61 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1983:276457 BIOSIS
DOCUMENT NUMBER: BA76:33949
TITLE: SEROLOGICAL IDENTIFICATION OF PILUS ANTIGEN AND OTHER
PROTEIN ANTIGENS OF BACTEROIDES-NODOSUS USING ELECTRO BLOT
RADIO IMMUNOASSAY AFTER ELECTROPHORETIC FRACTIONATION OF
THE PROTEINS ON SODIUM DODECYL SULFATE POLY ACRYLAMIDE
GELS.
AUTHOR(S): O'DONNELL I J; STEWART D J; CLARK B L
CORPORATE SOURCE: DIVISION OF PROTEIN CHEMISTRY, CSIRO, PARKVILLE, VIC. 3052.
SOURCE: AUST J BIOL SCI, (1983) 36 (1), 15-20.
CODEN: AJBSAM. ISSN: 0004-9417.
FILE SEGMENT: BA; OLD
LANGUAGE: English

AB Proteins of various B. nodosus strains were fractionated by polyacrylamide gel electrophoresis in buffer containing sodium dodecyl sulfate. Transfer of these proteins to activated paper was carried out electrophoretically (Electro-Blot). Subsequent sequential reaction of these proteins with sera from sheep which had been naturally infected with a particular strain of B. nodosus showed that there were **antibodies** to many (10-15) components. **Antibodies** to **pilus proteins** were recognized; the most predominant **antibody** in natural infections was to antigens with MW of .apprx. 75,000. Assessment of the paper-bound antigens by successive reactions with antisera from sheep infected with other strains of B. nodosus gave a semiquantitative picture of cross-reactions.

L36 ANSWER 62 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1983:199333 BIOSIS
DOCUMENT NUMBER: BA75:49333
TITLE: PROTECTION OF SHEEP AGAINST EXPERIMENTAL FOOT ROT BY
VACCINATION WITH PILI PURIFIED FROM
BACTEROIDES-NODOSUS.
AUTHOR(S): EVERY D; SKERMAN T M
CORPORATE SOURCE: WALLACEVILLE ANIMAL RESEARCH CENTRE, RESEARCH DIV.,
MINISTRY AGRICULTURE FISHERIES, PRIVATE BAG, UPPER HUTT.
SOURCE: N Z VET J, (1982) 30 (10), 156-158.
CODEN: NEZTAF. ISSN: 0048-0169.
FILE SEGMENT: BA; OLD
LANGUAGE: English

AB Merino sheep **vaccinated** with either whole B. nodosus organisms, a crude surface antigen preparation or highly purified pili (> 99% homogeneity) in oil adjuvant, developed significant resistance to artificial footrot infection when compared with **unvaccinated** control sheep inoculated with saline-in-oil emulsion (Freund's incomplete adjuvant) alone. The pili-**vaccinated** sheep generally had higher K-agglutinating **antibody** titers than sheep **vaccinated** with whole B. nodosus. These results confirmed the role of B. nodosus **pilus protein** both as a protective antigen and the

K-agglutinin. **Vaccines** prepared with Freund's incomplete adjuvant containing either purified pili, crude pili or B. nodosus whole cells did not produce significantly different injection-site reactions.

L36 ANSWER 63 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 ACCESSION NUMBER: 1983:77509 BIOSIS
 DOCUMENT NUMBER: BR25:2509
 TITLE: **ANTIBODY PROFILES IN LOCAL AND DISSEMINATED GONOCOCCAL INFECTION.**
 AUTHOR(S): HADFIELD S G; GLYNN A A
 CORPORATE SOURCE: DEP. BACTERIOL., ST. MARY'S HOSP. MED. SCH., LONDON W2 1PG.
 SOURCE: 144TH MEETING OF THE PATHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND, CAMBRIDGE, ENGLAND, JAN. 5-8, 1982. J PATHOL, (1982) 138 (1), 57.
 CODEN: JPTLAS. ISSN: 0022-3417.
 DOCUMENT TYPE: Conference
 FILE SEGMENT: BR; OLD
 LANGUAGE: English

L36 ANSWER 64 OF 67 MEDLINE on STN DUPLICATE 31
 ACCESSION NUMBER: 83025096 MEDLINE
 DOCUMENT NUMBER: 83025096 PubMed ID: 6127165
 TITLE: Pilus expression in Neisseria gonorrhoeae involves chromosomal rearrangement.
 AUTHOR: Meyer T F; Mlawer N; So M
 SOURCE: CELL, (1982 Aug) 30 (1) 45-52.
 Journal code: 0413066. ISSN: 0092-8674.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 198212
 ENTRY DATE: Entered STN: 19900317
 Last Updated on STN: 19950206
 Entered Medline: 19821218

AB The Neisseria gonorrhoeae **pilus protein** is one of the major **antigenic determinants** on the cell's surface. It is comprised of identical subunits of approximately 18 kd and plays a role in the infectivity and virulence of the organism. We have cloned the gene encoding a gonococcal **pilus protein** into Escherichia coli, and, using one of these clones as a probe in hybridization studies, we have shown that conversion of the pilus positive to pilus negative state in N. gonorrhoeae involves chromosomal rearrangement. Although the **pilus protein** is produced by E. coli, it does not appear to be assembled on the surface of the cell in native form.

L36 ANSWER 65 OF 67 MEDLINE on STN DUPLICATE 32
 ACCESSION NUMBER: 82031292 MEDLINE
 DOCUMENT NUMBER: 82031292 PubMed ID: 6116723
 TITLE: Gonococcal pilus **vaccine**. Studies of antigenicity and inhibition of attachment.
 AUTHOR: Tramont E C; Sadoff J C; Boslego J W; Ciak J; McChesney D; Brinton C C; Wood S; Takafuji E
 SOURCE: JOURNAL OF CLINICAL INVESTIGATION, (1981 Oct) 68 (4) 881-8.
 Journal code: 7802877. ISSN: 0021-9738.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: (CLINICAL TRIAL)
 (CONTROLLED CLINICAL TRIAL)
 Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English
 FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
 ENTRY MONTH: 198112
 ENTRY DATE: Entered STN: 19900316
 Last Updated on STN: 19970203
 Entered Medline: 19811221

AB A gonococcal pilus **vaccine** or placebo was injected subcutaneously or intramuscularly into 71 human volunteers. The **vaccine** was found to be safe. The principal adverse reaction was a complaint of a sore arm, which was caused, at least in part, to the volume of material injected. 6 of 64 (9%) volunteers receiving the larger doses also complained of malaise. The **vaccine** was found to be antigenic. All of the volunteers developed an **immunoglobulin** class-specific **antibody** response as measured by a solid phase radioimmunoassay. The **antibody** was capable of blocking the attachment of gonococci to epithelial cells. A slight **antibody** response was also demonstrated to gonococcal lipopolysaccharide but the **antibody** responsible for blocking attachment of gonococci was directed entirely at the **pilus protein**. The stimulated **antibodies** were shown to crossreact with isolated pili of heterologous gonococcal strains and to block the attachment of heterologous gonococci. Absorption of immune sera by a heterologous pilus reduced the inhibition of attachment **antibodies** to pre-immune level, suggesting that the immune response was directed at a common pilus determinant.

L36 ANSWER 66 OF 67 MEDLINE on STN
 ACCESSION NUMBER: 81152798 MEDLINE
 DOCUMENT NUMBER: 81152798 PubMed ID: 6111121
 TITLE: Purification of pili from Escherichia coli and Salmonella typhimurium. A preliminary report.
 AUTHOR: Korhonen T K
 SOURCE: SCANDINAVIAN JOURNAL OF INFECTIOUS DISEASES. SUPPLEMENTUM, (1980) Suppl 24 154-7.
 Journal code: 0251025. ISSN: 0300-8878.
 PUB. COUNTRY: Sweden
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 198105
 ENTRY DATE: Entered STN: 19900316
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AB A new **procedure** was developed for the purification of pili from Escherichia coli and Salmonella typhimurium. The pili were removed from the bacterial cells by mechanical agitation and then concentrated by precipitation with ammonium sulfate. After dialysis, the pili were solubilized in a buffer containing deoxycholate. This **treatment** did not solubilize the outer membrane proteins. The pili were then separated by ultracentrifugation in a sucrose gradient and finally passed through a Sepharose 4B column in a 6 M urea buffer. The pili were not dissociated by concentrated urea and they eluted in the void volume of the Sepharose 4B column. Because the enterobacterial flagella dissociate in concentrated urea, this **procedure** enables the purification of the pili from the flagellated strains also. The purified **pilus proteins** were free from lipopolysaccharide and outer membrane proteins. The molecular characteristics and the binding properties of these **pilus proteins** are briefly described.

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TITLE: Studies on gonococcus infection. V. Observations on in vitro interactions of gonococci and human neutrophils.
AUTHOR: Swanson J.; Sparks E.; Zeligs B.; et al.
CORPORATE SOURCE: Dept. Pathol., Univ. Utah Coll. Med., Salt Lake City, Ut. 84132, United States
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AB The association of in vitro human leukocytes with pilated, N. gonorrhoeae type 2 exceeds that for nonpilated, type 4 organisms but is less than that for nonpilated, type 4 gonococci. The two nonpilated forms of gonococci (types 4 and 4) attach to tissue culture cells to a much lesser extent than do pilated, type 2 organisms of the same strain. Trypsin **treatment** of either pilated (type 2) or nonpilated (type 4) gonococci markedly reduces the attachment ingestion of these organisms with leukocytes, but the same trypsin **treatment** does not depilate the type 2 organisms nor visibly alter the morphology of their pili. Similar reductions in association with leukocytes are found if the gonococci are **pretreated** with chymotrypsin, heat or glutaraldehyde. High levels of association between gonococci and leukocytes are reestablished if the trypsin or chymotrypsin **treated** organisms are reincubated in protease free medium. These data suggest that interactions between gonococci and human neutrophils are mediated through surface characteristics of the bacteria, different from those which influence attachment of the organisms to tissue culture cells. In the latter instance, pili appear to positively influence gonococcal attachment, whereas in the former a nonpilus bacterial cell wall **nonpilus protein** is probably the major determiner in the interaction between leukocytes and gonococci.